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EYE TROUBLES IN OLD AGE

EYE TROUBLES IN OLD AGE

DR. R. S. AGARWAL

First Edition 1946

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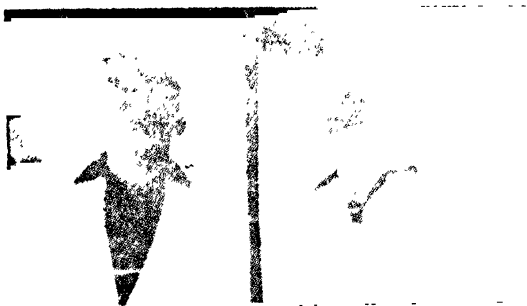
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*Dr. W. H. Bates. M. D., New York, Ophthalmologist.
Discoverer of the cure of imperfect sight by treatment
without glasses*

SUN TREATMENT



*Concentrating the sun
rays with sun-glass
on the closed eye*

*Facing the strong
light with eyes
closed*



Sun treatment on white part of the eye, called sclera

Eye Troubles in Old Age

CHAPTER I

Introduction

IT is said that everyone nearing the fortieth year suffers from defective eye-sight due to old age and glasses are the only palliative. This belief seems to be long-standing. The eye is one of the sense organs like the ear, nose etc. It does its function of seeing as other organs do of hearing and smelling etc. When other sense organs do not become defective in old age except in a few cases, why should the eye? It indicates that there is some other cause, and treatment for that cause is the right treatment.

In the treatment of the eye diseases the methods which are at hand with the medical profession in general are of little value. They neither prevent nor cure the disease. When the patient complains of defective eye-sight, glasses are given to him. After having the glasses the sight goes on deteriorating and higher powers of glasses are prescribed. Some of the cases become so bad that they are given up as incurable. When there are symptoms of cataract and glaucoma in the eye, patients are advised operation. Cataract patients have to wait and sometimes they have to

wait for their whole life till the cataract is matured and Glaucoma cases are seldom benefited by operation. Diseases of the retina, choroid and the optic nerve are rarely cured by the usual treatment. At first most of the time and money are wasted in finding out the cause of the diseases. Usually the cause is not found out and experimental treatment is given. Most of these cases are declared as hopeless sooner or later. Patients who have no organic defect in the eye but suffer from defective eye-sight are treated in various ineffective ways. In short, the present systems of treating diseases of the eye and its discomforts are very unsatisfactory.

The remarkable discovery of Dr. W. H. Bates of America that strain is the real cause of most eye-diseases and relaxation or relief of the strain is the real treatment of eye-diseases has given to the medical profession something like an 'Elxir'. The curative value of Dr. Bates' system of treating eye-diseases has already proved to be very great. Throughout the earth there are men, women, and children to-day who think of him with gratitude because of pain relieved and sight restored.

During my practice Nature guided me to find out the value of all the methods. In my early days of practice I prescribed glasses to all my patients and performed operation as others do. I studied the medicinal side from Ayurvedic books also and gained experience about the use of Ayurvedic medicines. Sushruta is the first Ophthalmologist who wrote a book on eye diseases. I found that there was truth in the

methods of application of medicines but they were not sufficient for the cure of all the eye-diseases.

When I studied Dr. Bates' system of treating imperfect eye-sight I was very much impressed by it. I myself was using glasses at that time for nine years and was able to cure myself in a month's time. I tried the methods on a boy who was blind since birth with his left eye and was cured in one and a half months. I felt very much interested in this system and was feeling that some secret hand was constantly guiding and helping me. Later on a boy who was blind with the right eye since birth was cured in two hours. A careful study of the methods revealed many new things, but the history of all that is too long to be discussed here.

I evolved a system of practical treatment based on all the old systems as well as the methods of Dr. Bates. I find that all the methods of the treatment—medicines, glasses, operations, relaxation etc.,—have their value; but one has to discriminate what will be helpful in a particular case. Relaxation treatment as prescribed by Dr. Bates is unavoidable and indispensable in all cases. Even if it is necessary to perform operation or to prescribe glasses or medicine it is very helpful to prescribe the methods of relaxation along with them. Without giving relaxation no constructive work can be done and the condition of patients will become worse.

The efficacy of Dr. Bates' relaxation methods is so great that one can successfully treat cases of eye troubles without having the diagnosis even. At times

I was unable to diagnose the disease in some cases but I found myself quite successful in treating such cases by intelligently following the relaxation methods. The reason is that whenever a patient complains of pain, headache, defective vision etc., it indicates mental and eye strain. Treatment which can relieve this strain will surely prove useful, at times miraculous. Sometime back an elderly lady gave a history of constant pain and fatigue in the eyes, inability to sleep at night, presence of redness and swelling in the eyes in the mornings. Every doctor who examined her admitted that he did not know what was wrong. Blindness was expected by some doctors in the course of a few years. I told the lady that I did not know what was wrong with her eyes, but I believed that she could be cured even without any diagnosis being made or without discovering the cause of her troubles. Then I said to the lady: "Look at a large letter of the Snellen test card and note its blackness. Then cover your eyes with the palms of your hands, shutting out all the light, and remember the blackness of the letter until you saw everything black." She started to do as I suggested and after a few minutes she told me that she saw everything perfectly black and she felt a great relief to her eye troubles. In a few days by frequent palming and swinging she got complete relief from all the discomforts from which she suffered. The details of all the relaxation methods have been fully explained in my book — "Mind and Vision" — but a short summary of them has been included in this book also. Along with the relaxation treatment I have dealt with

the medicines, operations and glasses too. The diseases which generally appear from the middle age have been fully explained with the necessary treatment. The case reports and the stories from the clinic have made the subject interesting and the technique simple to understand. I have made use of the writings of Dr. Bates which are now out of print. I hope this book will prove very useful both to the medical profession, as well as to the lay public.

The value of the practical work of all the methods at Dr. Agarwal's Eye Institute Delhi has now become widely known and we receive many patients who have been declared as incurable. A report of some among such cases appears now and then in the Medical Journals. Practical training is imparted to deserving medical students.

Definitions

NORMAL VISION is perfect sight at all distances. The Snellen test card is the standard for testing the vision. When the twenty feet line of the card can be read at twenty feet or further, and fine print can be read at nine inches or less, one has normal vision.

PRESBYOPIA or OLD AGE SIGHT : The vision is imperfect when the patient tries to read fine print at a near point . The distant vision may or may not be good.

HYPERMETROPIA or FARSIGHTEDNESS : The sight is not so good at a near point as it is for more distant objects.

MYOPIA or **NEAR-SIGHTEDNESS**: The vision for near objects is good, while the distant vision is imperfect.

ASTIGMATISM is an imperfect curvature of the eye. Usually the front part of the eye has one curve which is different from all the other curves.

CATARACT is an opacity of the lens, which interferes with good vision.

FLOATING SPECKS are not real, they are imagined.

RETINITIS PIGMENTOSA is a disease of the interior of the eye, accompanied by the formation of black pigment spots.

IRITIS is an inflammation of the iris, or the coloured part of the eye.

The **SNELLEN TEST CARD** has letters or other objects printed in varying sizes. The smallest letter seen clearly on the card is a measure of the vision.

FINE PRINT or **DIAMOND TYPE** is one of the smallest types used in printing and helps to improve the vision if it is read every day. The print from no. 8 to 15 of the Fundamental card is diamond type.

PHOTO PRINT is the photographic type reduction. Patients who can read photographic type reductions are instantly relieved of pain and discomfort when they do so, and those who cannot read such type may be benefited simply by looking at it.

WHITE LINE is the space between the lines of print. To the normal eye the white line regarded appears whiter than the margin of the page.

CENTRAL FIXATION is the ability to see best the letter or part of the letter or other object regarded.

MEMORY or IMAGINATION is the ability to see or recall letters or other objects, when the eyes are closed, as well as they can be seen with the eyes open.

CHAPTER II

Structure of the Eye

THE VISIBLE EYE

The eye or the organ of sight is like a tiny ball placed in a cavity called 'orbit'. When one looks at the face of a person, only a small portion of the eyeball is visible. There are eyelashes and eyelids over the eye—two eyelids over each eye, upper and lower. When both the lids meet together the eye is not visible.

When the eye is open, a white portion of it is seen. This white part is very tough and is meant for the protection of the inside structures. This is called sclera. There is a thin cover over the sclera, known as conjunctiva which spreads on the inner surface of the lids also.

There is a circular dark-brown area touching the white part called 'iris'. In the centre of this dark area there is a black spot called 'pupil' which contracts in the light and dilates in the dark. The pupil is the hole in the iris.

The diagram of the eye (diagram 1, p. 10) indicates that the eyelashes, lids, sclera, iris and pupil form circles, each joining the other as given below :

1. The eyelashes form the outermost circle,
2. The circle of the eyelids within the eyelashes.

3. The circle of white part or sclera within the eyelids.
4. The circle of dark-brown area called iris within the sclera.
5. The circle of the pupil within the iris.

THE WHOLE EYEBALL

The eyeball may be compared to a miniature football; but the football has two covers or layers while the eye has three:

1. The outermost cover is very tough, protects the inner structures and consists of sclera behind and cornea in front. The cornea is transparent.

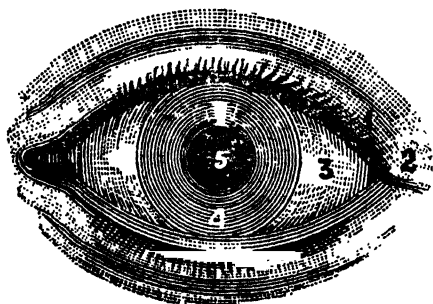
2. The middle cover or layer is black, rich in blood vessels, and nourishes the eye. It consists of choroid, ciliary body and iris.

The innermost cover is very thin and delicate for receiving the images. This thin layer is called retina. In the centre of the retina is a small circular elevation known as yellow spot or macula lutea. The centre of this spot is the seat of most acute vision.

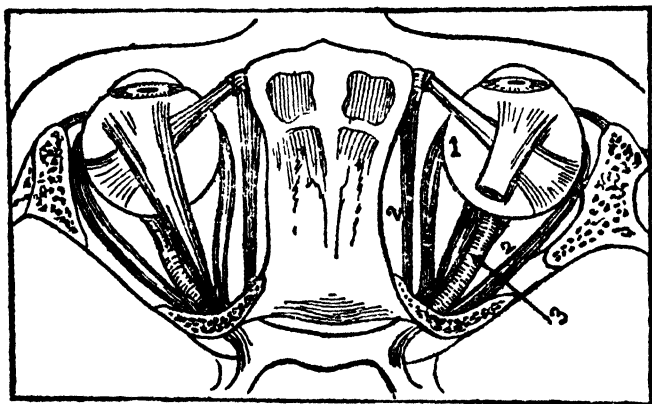
Inside these covers a thick jelly-like substance called vitreous humour and lens are present.

The eyeball is supported in the orbit by means of external eye-muscles which move the eyeball in various directions. There are six muscles on the outside of the eyeballs, four known as the 'recti' and two as the 'obliques.'

THE VISIBLE EYE

*Diagram 1*

EXTERNAL EYE MUSCLES

*Diagram 2*

These muscles support the eyeball and move it in various directions. They are six in number, four known as the 'recti' and two as the 'obliques'.

THE REFRACTIVE APPARATUS

The refractive apparatus consists of (diagram 2. p. 10)

1. The cornea. It is the outermost transparent circular layer like a watch-glass in front of the dark-brown area iris.

2. The lens. It is a transparent magnifying glass placed behind the iris.

3. The retina. It is the image-receiving plate.

The refractive apparatus of the eye is (diagram 3, p. 12) compared to the photographic apparatus called the camera. The camera has a diaphragm with an opening, a len and a sensitive plate. Similarly the eye has the iris with an opening called the pupil, the lens and the retina.

In the camera the adjustment necessary for focussing the image is effected by a change in the length of the body. The eye also, like the camera, adjusts its focus by a change in the length of the eyeball, this alteration being brought about by the action of the muscles situated outside the eyeball, and not by the lens and the ciliary muscle. When the eye is out of focus, the condition is said to be 'an error of refraction', and there is shortsight (myopia) or longsight (hypermetropia), without or with astigmatism.

In one respect, however, there is a great difference between the two instruments. The sensitive plate of the camera is equally sensitive in every part; but the retina has a point of maximum sensitiveness. called macula lutea. The eye with normal sight, there-

fore, sees best only one part of an object it looks at, and it sees every other part worse, in proportion to the distance of that point from the point of maximum vision.

Vibrations of light pass through the cornea and lens and produce images of the outside world on the retina. These images are transmitted through a nerve

THE REFRACTIVE APPARATUS

The camera and the eye

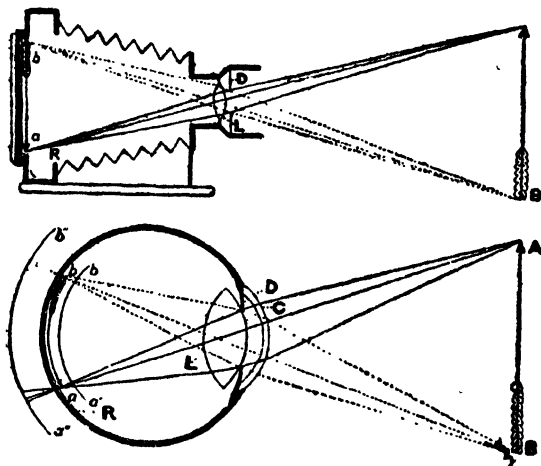


Diagram 3

AB,—Object of vision or object to be photographed.

a b. Image on the sensitive plate or retina.

a' b'. Image in the myopic eye.

a'' b''. Image in the hypermetropic eye.

called the optic nerve to the back part of the brain where the mind interprets these images and the vision is the result.

Functions of the Eye

I. ACT OF SEEING

The action of the eye is to receive the images of the outside world and transmit them to the mind. This action of the eye is automatic, that is, it requires no effort to see the object. One may desire or not to see the objects, but when the eyes are open they receive the images of the objects. The act of seeing is passive. Things are seen, just as they are felt or heard or tasted without effort or volition on the part of the subject. The eye with normal sight never tries to see.

When the image of the object reaches the mind, the mind interprets it in its own way. The object may

Diaphragm D.—In the camera the diaphragm is made of a circular overlapping plate of metal by means of which the opening through which the rays of light enter the chamber can be enlarged or contracted.

In the eye, the iris acts as a diaphragm and has a natural capacity for dilating and contracting the opening called the pupil of the eye.

Lens L.—The lens behind the diaphragm, where the light rays are refracted.

Sensitive Plate R.—The sensitive plate in the camera or the retina of the eye, for receiving the image of the object.

be one thing and the mind's imagination about it may be a different thing. For example, a rope is sometimes mistaken for the snake or mirage for water. Therefore, we see only what we think or imagine. In short, our sight is our imagination; and when the imagination is perfect, the sight is perfect. The following illustration is very interesting:

Take a Snellen test card and hold it at a distance from your eyes at which your sight is fairly good. Look at the white centre of the large "O" and compare the whiteness of the centre of the "O" with the whiteness of the rest of the card. You may do it readily; but if not, use a screen, that is, a card with a small hole in it. With that card, cover over the black part of the letter "O" and note the white centre of the letter which is exposed by the opening in the screen. Remove the screen and observe that there is a change in the appearance of the white, which appears to be a whiter white when the black of the letter is exposed. When the black part of the letter is covered with a screen, the centre of the "O" is of the same whiteness as the rest of the card. It is, therefore, possible to demonstrate that you do not see the white centre of the "O" whiter than the rest of the card, because you are seeing something that is not there. When you see something that is not there, you do not really see it, you only imagine it. The whiter you imagine the centre of the "O", the better becomes the vision for the letter "O", and when the vision of the letter "O" improves, the vision of all the letters on the test card improves. The perfect imagination of the white centre of the "O"

means perfect imagination of the black, because you cannot imagine the white perfectly, without imagining the black perfectly. When the mind is at perfect rest, the eye does its function normally.

2. BINOCULAR VISION

We have two eyes, and both receive the images of the same object, but we see only one image. This is because two images are fused into one by the mind. This is called binocular vision. Binocular vision is due to the harmony of action of the two eyes and the mind.

3. EXPRESSION

The eyes express the inner feelings, personal magnetism, physical diseases and the beauty of the face. The expression of the normal eyes is calm, quiet and intense.

4. MOVEMENTS OF THE EYEBALL

The eyeball moves in various directions by the action of the outside muscles. Usually they make short, gentle and rapid movements unconsciously and the movement is not conspicuous, but by direct examination with the Ophthalmoscope it can always be demonstrated. If the vision is normal these movements are extremely rapid and unaccompanied by any appearance of effort. The movements of an eye with imperfect sight, on the contrary, are slower and jerky and their excursions are wider.

Normally the eyeballs move with the movement of the head, and any movement of the eyeballs, con-

sciously or unconsciously, in the opposite direction of the head causes strain.

5. CENTRAL FIXATION

The retina has a point of most acute vision. This point is called the macula lutea. When the eye looks at an object or a letter on the test card, it sees that object or letter best which it regards; other letters appear less distinct. This action of seeing the part regarded best is performed by the macula lutea, and is called central fixation. When the sight is normal the part seen best is extremely small. It is an invariable symptom of all eye troubles that this central fixation is lost. When the eye possesses central fixation, it not only possesses perfect sight but it is perfectly at rest and can be used indefinitely without fatigue.

FUNCTION OF EYELIDS

1. They act as a cover and protector.
2. They make short and gentle movements all the time when one is awake. This function is performed unconsciously whatever one may be doing. This natural habit of the eyelids is called blinking. When the sight is normal, blinking is short, rapid and gentle; but when the eye is under strain or defective, blinking is not normal—it is long, slow and jerky and with effort.
3. Movements of the eyelids help the eyeball to move and assist in the proper circulation of blood.
4. They keep the surface of the eyeball covered with a thin layer of tears, thus keeping the surface of the eye moist.



The Usual Method of Examining the Eye by Retinoscope

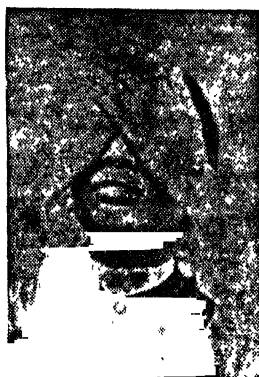
EYE BATH



Wrong way

Right way

PALMING



Closing the eyes and covering them with the palms of the hands

Examination of the Eye

For practical work, specially when one has to deal with a large number of patients, it is not necessary to have a detailed examination of the eye. Two to ten minutes are quite sufficient for diagnosing the disease and prescribing the treatment. Even if it is difficult to diagnose a particular case or if it takes a long time, treatment can be begun safely. Use of atropine or other medicines which dilate the pupil is quite unnecessary in most cases as they often increase the strain in the eyes, specially in old age, and the examination of the eyes can be conveniently performed without their use. Some patients actually become blind by the use of atropine and we often see reports of such cases; but this fact is generally ignored and as a routine the eyes are examined under atropine or other medicines. Anyone who understands the application of the methods written in this book can successfully treat a case even if the diagnosis is not made. Some cases need prompt help and if much time is wasted in diagnosing such cases, all hope of recovery may be lost. Here we do not propose to give in detail the methods of eye-examination; if one feels interested one can study the subject from such books as 'Diseases of the Eye' by May & Worth.

When a patient presents himself for treatment, a record of his name, age and address is to be made. Then hear patiently the history and complaints of the patient and, if necessary, have a few cross questions. The next procedure is to test the distant vision on the Snellen test card without and with glasses. Then the

near sight is tested on the reading test type without and with glasses. Such records of eye-sight are to be made from time to time during the course of the treatment. They give information of the improvement achieved. In some cases the improvement is so unconscious that the patient feels no improvement unless the records of vision are compared before him. The eyes are then examined with the ophthalmoscope or retinoscope. (The ophthalmoscope is valuable in diagnosing cataract, opacities of the cornea and diseases of the interior of the eyeball. The retinoscope is used in diagnosing near-sightedness, far-sightedness and astigmatism).

TEST OF DISTANT VISION

Place the Snellen Eye Testing Chart at 20 feet (6 meters) distance in good light at the level of the eyes. Read the chart with each eye separately, one eye being covered with the palm of the hand avoiding any pressure upon the eyeball. The vision is expressed by a fraction, the numerator of which corresponds to the number of feet separating the patient from the chart, and the denominator to the number written on the line read. If the sight is normal, the vision will be equal to 20/20 or 6/6. This is expressed as D. V. (distant vision) 20/20. If at a distance of 20 feet one reads the first letter of the chart with the right eye and the third line with the left eye, then write R. E. (right eye) = 20/200, L. E. (left eye) = 20/70.

If no letter is seen at 20 feet, reduce the distance to 10 feet or 5 feet or 1 foot. Suppose the first letter is read at 5 feet, then write D. V. = 5/200.

If you want to convert the figures to meters, divide the feet figures by ten and multiply by three; for example, 200 feet written on the top letter, is equivalent to $(200/10 \times 3) = 60$ meters.

TEST OF NEAR VISION

Generally two kinds of reading test types are used for testing near vision—one Snellen test types and the other Jaegar's test types. The Fundamental test type-card (next page) is usually used for our work. Hold the test type at 12 inches, 9 inches and 6 inches or nearer. Read it with each eye covering the other eye with the palm of the hand or an eye-shield. The vision is expressed by 'F' followed by the number corresponding to the finest print which one can read. Suppose No. 4 of F Test type is read at 9 inches with the right eye, then write R. E. = F 4 at 9 inches.

Another and even better way to test the distant and near sight is to compare the blackness of the letter at the near-point and at the distance, in a dim light and in a good one. With perfect sight, black is not altered by changed illumination or distance. It appears just as black at the distance as at the near-point and just as black in a dim light as in a good one. If it does not appear equally black under all these conditions, one may know that his eye-sight is imperfect.

Fundamentals

By

W. H. Bates, M. D.

1. Glasses discarded permanently.

2. Central Fixation is seeing best where you are looking.

3. Favorable conditions: Light may be bright or dim. The distance of the print from the eyes, where seen best, also varies with people.

4. Shifting: With normal sight the eyes are moving all the time.

5. Swinging: When the eyes move slowly or rapidly from side to side, stationary objects appear to move in the opposite direction.

6. Long Swing: Stand with the feet about one foot apart, turn the body to the right—at the same time lifting the heel of the left foot. Do not move the head or eyes or pay any attention to the apparent movement of stationary objects. Now place the left heel on the floor, turn the body to the left, raising the heel of the right foot. Alternate.

7. Drifting Swing. When practicing this swing, one pays no attention to the clearness of stationary objects, which appear to be moving. The eyes wander from point to point slowly, easily, or lazily, so that the stare or strain may be avoided.

8. Variable Swing: Hold the forefinger of one hand six inches from the right eye and about the same distance to the right, look straight ahead and move the head a short distance from side to side. The finger appears to move.

9. Stationary Objects Moving: By moving the head and eyes a short distance from side to side, being sure to blink, one can imagine stationary objects to be moving.

10. Memory: Improving the memory of letters and other objects improves the vision for everything.

11. Imagination: We see only what we think we see, or what we imagine. We can only imagine what we remember.

12. Rest: All cases of imperfect sight are improved by closing the eyes and resting them.

13. Palming: The closed eyes may be covered with the palm of one or both hands.

14. Blinking: The normal eye blinks, or closes and opens very frequently.

15. Mental Pictures: As long as one is awake one has all kinds of memories of mental pictures. If these pictures are remembered easily, perfectly, the vision is benefited.

NORMAL EYE

1. An eye with a perfect normal sight^t is rare ; but for practical work a standard has been fixed. When the sight is normal for distance one reads the twenty feet line on the Snellen test card at twenty feet distance, and it is recorded as 20/20. When the sight is normal for near work, one reads the fine print at nine to twelve inches.

2. The normal eye sees a small letter of the test card to be of the same size at 20 feet as it does at one foot. The white centres of the letters on the test card are imagined to be whiter than other parts of the card.

3. When the sight is perfect, the letters on the test card seem to be perfectly black and perfectly distinct. The eye never tries to see them. The eye does not suffer from pain, discomfort or fatigue. The person is unconscious of his eyes.

4. When the normal eye regards a particular letter on the test card, the letter is seen better and blacker than all the rest, and it seems as if the letter makes a slow, short and easy swing.

5. When a person with normal sight closes the eyes and covers them with the palms of his hands avoiding any pressure upon the eyeballs, he experiences a perfect black before the eyes as if he is in a perfectly dark room. This is because the retina of the eye reacts only to light and when there is no light it stops its function and one sees all perfectly black.

CHAPTER III

Causes of Eye Troubles

Most people have difficulty in reading books or newspapers when they arrive at the middle age and they are dependent upon their glasses. The decline of near vision usually goes on increasing and higher power glasses are used. Sometimes the sight declines very rapidly and the patient changes his glasses to higher powers quite frequently till no more power can be added to the glasses and still the patient suffers from discomfort in reading; and if the patient does not get cataract, glaucoma, or inflammation of the retina, he may think himself fortunate. When patients complain about the worsening of the sight and discomforts, the doctor satisfies them by saying that it is due to old age or by merely changing the glasses. He cannot tackle the case successfully.

Many patients at the middle age suffer from serious eye diseases as choroiditis, retinitis, optic atrophy, optic neuritis etc.; it is a general belief that syphilis is the cause of such eye diseases and that antisyphilitic treatment is to be adopted even when there is no history of syphilis or the blood examination is negative. Most of these cases become worse in spite of persistent treatment. The fact is that very few cases are affected by syphilis or cured by antisyphilitic treatment; in a majority of them the cause is not detected and the treatment fails.

It has become a usual practice to advise extraction of teeth when there is inflammation of the inside of the eyeball in old age, and at times when no cause of deterioration of sight is observed. This hit is usually made when the physician finds no other fault except pyorrhoea. When the teeth are extracted the patient very seldom gets any benefit. Of course, bad teeth should be attended to, but a drastic step of getting the teeth extracted immediately often proves useless.

- Some patients complain of smarting sensation in the eye, pain in the eyeballs, redness in the eyes, or discomfort after sleep, and it is usual to diagnose and treat such cases for trachoma. Usually no permanent benefit comes by such treatment. Long treatment with caustics adds more complications.

The real cause of eye troubles is an effort to see. The result is that central fixation is lost partially or completely. The part of the letter regarded is not seen best. This strain when it is habitual leads to all sorts of abnormal conditions and is, in fact, at the bottom of most eye troubles, both functional and organic. The proof that the loss of central fixation is the underlying cause of almost all eye diseases, is that the patient soon begins to get the benefit as soon as he is able to use the eye by central fixation which can be taught by various relaxation exercises.

When patients complain of eye troubles, they are often advised not to use the eyes. It seems to be a wrong advice. The eye is one of the sensory organs and performs the act of seeing whenever it is open, whether

the person wants to see or not. The eyes were made to see, and if, when they are open, they do not see, it is because they are under such a great strain that they cannot see. The remedy is not to avoid either near or distant vision, but to get rid of the strain which underlies the imperfect functioning of the eye at both points.

Vision under adverse Conditions

The ocular hygiene teaches us to protect the eyes from various influences which are very often difficult to avoid, and those who indulge in them are supposed to be ruining their eyes. Bright lights, dim lights, sudden fluctuations of light, reading fine print, reading in moving vehicles, reading lying down, going to the movies, etc., have long been considered "bad for the eyes" and much literature has been published about their supposedly direful effects. These ideas are diametrically opposed to the truth. When the eyes are properly used, vision under adverse conditions not only does not injure them, but is an actual benefit, because a greater degree of relaxation is required to see under such conditions than under more favourable ones. It is true that such adverse conditions may at first cause some discomfort, even to persons with normal vision; but a careful study of the facts has demonstrated that only persons with imperfect sight suffer seriously from them, and that such persons, if they practise central fixation, quickly become accustomed to it and obtain great benefit.

BRIGHT LIGHTS — The eye is made to react to the light and naturally it acquires the ability to take

care of itself under extreme conditions of illumination. Still the medical profession and the lay public remain in fear of strong lights. Extraordinary precautions are taken in houses and outside by means of umbrellas, hats, dark glasses, eyeshades and bandages. If actually some disease is present, it is no uncommon thing for patients to be kept for weeks, months and years in dark rooms, or with bandages over their eyes.

About this universal fear Dr. J. Herbert Parsons of the Royal Ophthalmic Hospital of London, addressing a meeting of the Ophthalmological Section of the American Medical Association in 1910, said that Ophthalmologists, if they were honest with themselves, "must confess to a lamentable ignorance of the conditions which render bright light deleterious to the eyes". Since then Verhoeff and Bell have reported an exhaustive series of experiments which indicate that the danger of injury to the eye from light radiation as such has been "very greatly exaggerated". It cannot be denied, of course, that brilliant sources of light sometimes produce unpleasant temporary symptoms; but as regards definite pathological effects or permanent impairment of vision from exposure to light alone, Dr. Verhoeff and Bell were unable to find, either clinically or experimentally, anything of a positive nature.

It is not light but darkness that is harmful to the eyes. Prolonged exclusion from the light always lowers the vision, and may produce serious inflammatory conditions. Among young children living in dark

houses this is a somewhat frequent cause of ulcers upon the cornea, which ultimately destroy the sight. Daily exposure of the closed eyes to the sun or strong electric light improves the health of the eye, relieves most of the discomforts, and is a great benefit in the inflammatory conditions of the eye.

DIM LIGHT — Children are usually cautioned by their parents and teachers not to read in a dim light. In fact there is a universal fear that reading or doing fine work in a dim light is very harmful to the eyes. However, this fear is unfounded. So long as the light is sufficient so that one can see without discomfort, this practice of reading in the dim light is not only harmless, but may be beneficial.

SUDDEN FLUCTUATIONS OF LIGHT — Sudden contrasts of light are supposed to be particularly harmful to the eye, but there is no evidence to support such beliefs. Sudden fluctuations of light undoubtedly cause discomfort to many persons, but I have found them actually beneficial instead of being injurious. Persons with imperfect sight suffer great inconvenience, resulting in lowered vision, from changes in the intensity of the light; but the lowered vision is always temporary, and if the eye is persistently exposed to these conditions, the sight is benefited. Such practices as reading alternately in a bright and a dim light, or going from a dark room to a well-lighted one, and *vice versa*, are to be recommended. Even such rapid and violent fluctuations of light as those involved in the production of the moving picture are, in the long run, beneficial to all eyes.

FINE PRINT — It is a common belief that reading fine print is very harmful to the eyes and most writers have stated that fine print is a strain to the eyesight, and is the cause of myopia. Everyone knows that Chinese and Japanese use very large print and suffer most from myopia and I think there is no nation in the world that has so much myopia. Dr. W. H. Bates has made many remarkable discoveries relative to the prevention and cure of imperfect sight without the aid of glasses. Among the most important of these discoveries and one that has been proved again and again is the following :

**FINE PRINT IS A BENEFIT TO THE EYE,
LARGE PRINT IS A MENACE.**

Large print is detrimental to perfect sight because the eye tries to see the whole letter at once. When one is looking at an object, for instance, a chair, the object blurs if the whole is seen at once. You cannot possibly see the arms, legs, back and body of a chair all at once. If you either see the back first or the seat, the object remains clear. This is central fixation, that is, seeing best where you are looking, and this central fixation is usually lost in reading large print.

Very fine print reading cannot be done unless the eyes are relaxed and central fixation is good. Children might be bored by books in exceedingly small print ; but there is no reason for supposing that their eyes would be harmed by such type. On the contrary, the reading of fine print (see next page), when it can be done without discomfort, has invariably proved to be

beneficial, and the dimmer the light in which it can be read, and the closer to the eyes it can be held, the greater the benefit. The reason is that fine print cannot be read in a dim light and close to the eyes unless the eyes are relaxed, whereas large print can be read in a good light and at ordinary reading distance although the eyes may be under a strain. Some people find it beneficial to imagine the white spaces between the lines of print, whiter than the margin. When one imagines the white spaces perfectly white, the print becomes very black and legible. Daily reading of fine print is a benefit to the eye. Persons who cannot read them are benefited simply by moving the sight on the white spaces in between the lines of print or by looking at them.

Seven Truths of Normal Sight

1. Normal Sight can always be demonstrated in the normal eye, but only under favorable conditions.
 2. Central Fixation: The letter or part of the letter regarded is always seen best.
 3. Shifting. The point regarded changes rapidly and continuously.
 4. Swinging: When the shifting is slow, the letters appear to move from side to side, or in other directions with a pendulum-like motion.
 5. Memory is perfect. The color and background of the letters or other objects seen, are remembered perfectly, instantaneously and continuously.
 6. Imagination is good. One may even see the white part of letters whiter than it really is, while the black is not altered by distance, illumination, size, or form, of the letters.
 7. Rest or relaxation of the eye and mind is perfect, and can always be demonstrated.
- When one of these seven fundamentals is perfect, all are perfect.

CHAPTER XIII

MEMORY AS AN AID TO VISION

WHEN the mind is able to remember perfectly any phenomenon of the senses, it is always perfectly relaxed. The sight is normal if the eyes are open, and when they are closed and covered so as to exclude all the light and even a perfect black held—what is nothing at all. If you can remember the lighting of a watch in an order as a taste perfectly your mind is perfectly at rest, and you will see a perfect black when your eyes are closed and covered. If your memory of a new working hat black when the light was excluded from your eyes, if you want to remember a hat of some precisely while your eyes were closed and covered, you would see nothing but black. But in the case of any of these phenomena in the mind you can test the correctness of the memory, and the same is true of colors other than black. All other colors, including white, are altered by the amount of light in which they are exposed, and are seldom seen so perfectly as it is possible for the normal eye to see them. Just when the light is removed, black is just as black in a dim light as in a bright one. It is also just as black at the distance as at the near-point, while a small area is just as black as a large one, and, in fact, appears blackness. Since the memory, once reliable

*Specimen of Diamond
Type or Fine Print*

*Photographic Type
Reduction*

Patients who can read photographic type reductions are instantly relieved of pain and discomfort when they do so, and those who cannot read such type may be benefited simply by looking at it.

READING IN MOVING VEHICLES — Persons who wish to preserve their eyesight are frequently warned not to read in moving vehicles; but since under modern conditions of life many persons have to spend a large part of their time in moving vehicles, and many of them have no other time to read, it is useless to expect that they will ever discontinue the practice. Fortunately the theory of its injuriousness is not borne out by the facts. When the object regarded is moved more or less rapidly, strain and lowered vision are, at first, always produced; but this is always temporary, and ultimately the vision is improved by the practice.

READING WHILE LYING DOWN — There is probably no visual habit against which we have been more persistently warned than that of reading in a recumbent posture. Many plausible reasons have been advanced for its supposed injuriousness; but so delightful is the practice that few probably have ever been deterred from it by fear of the consequences. As in the case of the use of the eyes under other difficult conditions, it is a good thing to be able to read lying down, and the ability to do it improves with practice. In an upright position, with a good light coming over the left shoulder, one can read with the eyes under a considerable degree of strain; but in a recumbent posture, with the light and the angle of the page to the eye unfavourable, one cannot read unless one relaxes. Anyone who can read lying down without discomfort is not likely to have any difficulty in reading under ordinary conditions.

GOING TO THE MOVIES — Cinematograph pictures are commonly supposed to be very injurious to the eyes, and it is a fact that they often cause much discomfort and lowering of vision. They can, however, be made a means of improving sight. When they hurt the eyes it is because the subject strains to see them. If this tendency to strain can be overcome, the vision is always benefited, and if the practice of viewing the pictures is continued long enough, many eye troubles are cured.

I always advise many eye-patients to go to the movies frequently, become accustomed to the flickering light and learn to look at the picture without strain. They are advised to keep the upper lids down in the position of rest and to blink frequently. They are warned not to stare. If the pictures hurt the eyes I instruct them to look away to the dark for a while, then look at a corner of the picture; look away again, and then look a little nearer to the centre; and so on. In this way the patients soon become able to look directly at the picture without discomfort. When this does not help, I ask them to try palming for five minutes or longer, that is, to close the eyes and cover them with the palms avoiding any pressure on the eyeballs and then recall the memory of black colour or the episode. The fact is that vision under difficult condition is good mental training. The mind may be disturbed at first by the unfavourable environment; but after it has become accustomed to such environments, the mental control and, consequently, the eyesight is improved.

Effect of Solar Eclipse upon the Eye

A College student stared at the solar eclipse for about fifteen minutes with both eye open. Just after seeing the eclipse everything seemed to be blurred, covered with smoke. Next day something like a whirling flower composed of white and dark specks appeared all the time before the eyes even when they were closed. Whirling was very fast for the first three days. On the fifth day the patient felt a black speck bigger than the sun before his eyes all the time. While seeing sign-boards, sticks, parallel bars or other straight things, he felt them distorted. The lines of print seemed to be curved, and the letters dim. The black speck varied in size according to the distance at which he saw it. At ten feet its size was one and a half inches in diameter; and at one foot its diameter was less than half the centimeter. He consulted many doctors and the opinion was, "A part of the retina was burnt, and the defect would remain permanent. Use dark glasses." After examining the eyes of this patient, I explained to him that I differed from this opinion. The resulting blind area (Scotoma) and other symptoms were not due, as was commonly supposed, to any organic change in the eye but were the result of a strain of the mind and eyes while seeing the solar eclipse. A return to normal was quite possible, and the prompt relief of the symptoms mentioned would follow the relief of eye strain. This proved that the abnormal conditions were the result not of the bright light of the sun, but of the strain. I said, "The vision is a process of mental interpretation. The picture which the mind sees is not the impression

on the retina, but a mental interpretation of it. To the mind objects seen appear to be in an upright position, but the picture on the retina is upside down. When the sight is normal the margins and openings of black letters on a white card appear whiter than the rest of the card, but this, of course, is not the fact, the whole background being of the same whiteness. When the imagination is perfect the mind is always perfectly relaxed and nothing can harm the eyes and sight. By relaxation of the mind some persons can look at the sun for sufficient time without any discomfort or loss of vision. When the eyes and mind are under strain, the imagination is imperfect. The mind, in short, adds imperfection to the imperfect retinal image. A great part of the phenomena of imperfect sight is, therefore, imaginary and not in any way to be accounted for by the derangement of the visual apparatus."

My conversation impressed the patient and he was confident now about his cure. He had a good memory and it seemed to me easy to help him because good memory is a great aid to eyesight if it can be rightly applied. When he closed his eyes and covered them with the palms, avoiding any pressure upon the eyeballs, I asked him if he could imagine that he was writing his name with pen and ink on a sheet of white paper. He said he could do that quite easily. I directed him to spell his whole name and then imagine each letter, and to place an imaginary dot at the end of his name. I asked him next to forget about his name and remember the dot. The patient was able to remember the dot and remarked that the dot appeared

to move in various directions with a slow, short easy swing. Memory of a black dot may be difficult for many patients and other relaxation methods may be tried for them. After ten minutes when the patient opened his eyes he felt a cooling sensation in his eyes and relief of his discomfort. He frequently closed the eyes and covered them with the palms for ten or fifteen minutes each time, and usually remembered a black dot but sometimes he liked to recall the memory of other things as the colour of his black shoes and white trousers and his familiar game badminton.

While practising on the Snellen test card the patient glanced at the white centres of the letters instead of fixing the sight on the blackness of the letters. At times he closed the eyes for a minute or longer, remembering white snow, white paint, a white cloud in the sky. This enabled him to observe that the white centres of the letters appeared whiter than the margin of the card; and as the white centres appeared whiter, the blackness also increased, and subsequently the letter became perfectly distinct. His reading sight was soon improved when he moved his sight on the white spaces first below the lines of the print without making any effort to look at the letters. Gentle blinking was a great help.

Within a few days the sight became normal, and distortion of straight things disappeared, but the black speck faded gradually and it took about one month when the speck disappeared completely.

(2) Another patient, a Sanyasi, having normal vision stared at the mid-day sun just to attain some

mental power. After a few minutes when he took the sight away from the sun he began to see the sun on everything which he saw. When he closed his eyes the sun was visible in his imagination. This became a great discomfort to him because the true form and colour of the object was not visible due to the appearance of the sun on the object. Reading and writing became almost impossible. It was declared by the doctors that the condition of his eyes could not be improved as the retina of the eyes was damaged.

The Sanyasi was a man of determination and he dared to challenge the doctors' opinion. In the night when the moon was shining he looked at the moon for at least an hour with the idea that the cooling rays of the moon would neutralize the effect of the hot rays of the sun. While looking at the moon he mentally imagined the moon. The Sanyasi made himself all right within three days. To confirm that his discovery about the treatment was genuine he again made his eyes worse by looking at the sun and began to see the sun on all things. Again he repeated his experiment and looked at the moon in the same way and made his eyes all right.

(3) To another patient, after seeing the solar eclipse a yellow coloured speck appeared before the eyes. The black letters on the Snellen test card and on the book appeared to be grey. Reading sight had sufficiently deteriorated, letters appeared very irregular. Multiple images were frequently seen.

I advised this patient to cut all his activities and remain in a green room for about a week. When

questioned whether the green or smoke-coloured goggles could serve the purpose of the green room, I said that they could be somewhat useful but complete relaxation was not possible as the goggles could not relieve the mental strain which was underlying the imperfect functioning of the eyes. Moreover when the goggles became misty and dirty the patient did not care to clean them as he was not conscious. It was a wrong belief that goggles kept the eyes safe from dust because the dust which entered inside could not come out hence there was accumulation of dust on the eyes and goggles. Being the son of a rich man a room was soon made of green shade by putting nice green curtains. As green colour is very soothing to the eyes this patient felt some relief. While remaining in the green room he washed his eyes with cold water by dipping his face in a basin full of water and then practised palming about five or six times a day. In the early morning the patient went out for walking with bare feet on the green grass. The mild dew touching the soles of the feet created a cooling sensation in the brain and helped in the relaxation of the mind. In a week's time the yellow speck completely disappeared but the sight for reading was not yet quite good. To improve the sight I directed the patient to practise central fixation on the various charts given in my book '*Central Fixation as an aid to Eyesight*'. After a few days not only ordinary reading became quite comfortable but the patient could also read even the finest print without any discomfort.

CHAPTER IV

Prevention of Eye Troubles

BLINKING

Blinking is moving the eyelids. The upper lid comes a little downwards and is again raised while the lower lid contracts just a little. It should be without any effort or jerk. Blinking may be done so rapidly that it does not become conspicuous. The normal eye can blink three or four times a second. Blinking is the natural habit of the eyelids and it is done unconsciously by the normal eyes all the time one is awake. When the eyes are under strain, blinking becomes jerky and an effort to blink is made. The habit of blinking can be restored by remembering to blink at frequent intervals. By consciously blinking correctly, it will become in time an unconscious habit. If you do not know correct blinking, look at the eyes of a tiny baby or a person with normal eyes. Blinking is a quick method of keeping the eyes at rest. Get the habit of blinking about twelve times a minute at least.

FINE PRINT

Persons, whose sight is beginning to fail at the near point, or who are approaching old age, should get a specimen of fine type (diamond type), and read it every day, bringing it closer and closer to the eyes till it can be read at six inches or less. Or get a

specimen of type reduced by photography until it is much smaller than diamond type, and do the same. They will thus escape not only the necessity of wearing glasses for reading and near work but all those eye troubles which now so often trouble the later years of life. Reading of fine print without effort relieves the strain of hypermetropia.

SNELLEN EYE TEST CARD

Daily exercise in distant vision with the Snellen test card has been proved to be a very effective method to prevent and cure eye troubles. The reason is that when the eye regards a familiar object, it gets relaxation. When the eye looks at an unfamiliar object it always strains more or less to see that object. Daily reading of the chart letters at fifteen or twenty feet distance, with both eyes and with each eye separately, improves the memory, imagination and sight. For this purpose a Snellen eye test card may be hung on the wall and every member of the family may read it daily. To prevent defective eyesight in schools and colleges, the test card is to be placed on the wall of each class room and the students should read it daily from their seats.

It is a fundamental truth that when one letter of the Snellen test card is seen perfectly, all the letters of the Snellen test card can be seen perfectly. When the sight is perfect, a letter is remembered, imagined or seen as well with the eyes open as when the eyes are closed. The vision of one letter of the Snellen test card can be improved with the eyes open by practising the memory

or the perfect imagination of the same letter alternately with the eyes closed. Whatever is done to improve the memory of one letter is a great benefit, because all the other letters are improved at the same time. This truth can be demonstrated in all cases. There are no exceptions. Regard the smaller letters of the Snellen test card at ten or fifteen feet, in such a way that each letter is seen blacker or more distinct than the rest of the letters. Regarding the letters in this way prevents eye troubles.

SUN TREATMENT — The eye is the creation of light and the eye needs light for its health. Sun rays have been proved to be very effective in the prevention and cure of most eye troubles.

Face the sun with the eyes closed and move the body and head lightly a short distance from side to side, allowing the sun to shine directly on the closed eyelids for five to thirty minutes. Choose preferably the early morning sunlight. It is the light rays which benefit the eyes rather than the heat rays. When the sun is not shining, a strong electric light (200 or 300 watts) can be substituted. One sits about six inches from the light allowing it to shine on the closed eyelids as in sun treatment.

Some patients need sun-glass treatment also. Sun-glass is a magnifying glass. When the patient moves with the eyes closed from side to side, the light is focused with the aid of sun-glass on the closed eyelids.

PALMING — Closing the eyes and covering them with the hollow of the palms of the hands avoiding any

pressure upon the eyeballs, is called palming. When the eyes are closed and covered with the palms, imagine something perfectly black or some pleasant thing, as a flower, a boat floating in the river, clouds moving in the sky, etc. Some persons like to remember familiar things, thus a knife is remembered by a surgeon, dollies by girls, babies by mothers. Palm for two to fifteen minutes. The longer palming is done, the greater the benefit to the eyes. Palming may be done at any time. Palming before going to bed induces good sleep. When people feel by experience that palming benefits the eyes, and relieves headaches, nervousness or other disagreeable symptoms, they will themselves practise palming very frequently.

DAILY PROGRAMME — Every morning sit facing the sun with the eyes closed for about five minutes. Then come to the shade and wash the eyes with cold water. Now palm for two to five minutes and then read the fine print or photo print. Blink often.

If one has no time to take the sun treatment or if the sun is not shining, one may read the fine print only. At night, it is a good practice to read the fine print under an artificial light. As it takes only a minute or two to read the fine print, no one should plead want of time as an excuse for not doing it. The story of a case written by Emily C. Lierman will give you a clear idea of the daily programme.

“A woman who had been suffering from pain and imperfect sight was sent to me for treatment. She suffered more at business than at any other time, and

glasses did not help her much. Having charge of a tea room she was continually greeting patrons and entertaining them. At times she seemed to have no trouble at all with her eyes and was able to read any part of the menu to patrons who asked her to do so, without using her glasses, which she wore most of the time. She had worn glasses off and on for four years and disliked them exceedingly, because they did not become her. Shortly before coming to me, she was told by an eye specialist that she would have to wear bi-focals. She was ready then to try almost anything rather than wear them.

Her vision for the test card was 15/20 in both eyes, but with fine print and ordinary type she did not do so well. I began treating her by asking her to palm and while her eyes were closed and covered, I explained that some patients were helped by palming, but if that were not so in her case, we would try something else. She had a good memory for objects and people's faces, but her memory for names was not so good.

I asked her to describe to me all the sections of the tea room that she could remember. In this way, her memory and imagination would improve for other things which were not remembered or imagined so well. She described in detail how the tables were arranged and the design of the table silver. She could not remember the pattern of the table-cloths and napkins, although when she purchased the table linens, she purposely selected a certain pattern because it appealed to her. This worried her, but I explained that after she had learned how to relax under unfavourable

conditions, she would be able to remember such details. I directed her to keep her eyes closed for more than half an hour, at times keeping perfectly still without speaking to me.

I watch patients very closely while they are palming to see whether they are in a comfortable position and if not I try to arrange it so. I find that when the knees are crossed, the position soon brings on an unconscious strain; therefore I direct the patient to keep the knees uncrossed. Then I arrange the feet so that they are comfortably placed either on the floor or on a footstool or hassock. The patient is usually most comfortable in an arm-chair and if the arms of the chair are not upholstered, I place a cushion under one elbow in such a way that the patient is most comfortable. This brings the patient in a position leaning over to the right side or to the left so I try to have the patient change the position while relaxing by reversing the cushion to the opposite arm of the chair. With children I manage a little differently, especially when they are not tall enough to rest their feet on a footstool.

The test card which I used for this patient had an extra line of letters smaller than the 10 line letters, which are read by the normal eyes at ten feet. After this woman had palmed sufficiently, I removed the footstool and while her eyes were still closed I told her to stand up and to start swaying her body slowly with an easy sway of the body from left to right. Then I told her to open her eyes and look from one edge of the Snellen test card to the other and to tell me what

the letters were as I pointed towards them. She read every letter of the test card with each eye separately without any difficulty whatsoever.

The patient was so excited over her sudden improvement in sight and the relaxation which she felt in her whole body, that she thought one lesson was all that was necessary for her. I thought that the improvement during her first treatment was only temporary and told her so. However, I was willing to give the patient the benefit of the doubt and told her that if her vision remained normal and she felt no more strain or discomfort, then it surely would not be necessary for her to take another lesson.

Early the next morning my telephone rang and it was she, explaining her discomfort and strain and begging me to see her again. I was surprised that the change came so soon. I thought that she would have at least a few days' relaxation and freedom from strain, but she had been at a bridge party after seeing me and something had happened to her during the course of the evening which brought her quickly to me the next day.

I feared that it would worry her if she could not do so well during her second treatment with the large Snellen test card, so we worked together with another part of the method. This time we used fine print. I sat directly in front of her as she looked at the little card with fine print, but it was pitiful to see her staring at it, trying to read.

Staring is such a common thing and most people stare unconsciously at times. A great many people

stare unconsciously most of the time and cause much or all of the discomfort which soon brings on chronic trouble with the eyes and sometimes causes blindness. If school teachers were instructed to remind pupils at intervals during the daily sessions of the permanent punishment to their eyes as the result of staring, it would be avoided in time and less eye glasses would be prescribed for school children.

People do not wait until they are physically tired out before they sit or lie down to rest, but most people do not know what to do about their eyes when they are mentally tired. In some cases just closing the eyes frequently for a second or two is all that is necessary to retain good vision for life. This I know to be true because my grandmother who lived until 79 years of age did not wear glasses at all until she was over 70 years of age and then they were not fitted by an oculist, but were purchased at the price of ten cents from a solicitor who came to her door. She used them only when threading a fine needle. Without glasses, she could see fine stitches while sewing, whether the thread was black or white. What I particularly remember was that she blinked her eyes often, which I thought at the time was a mistake or an affliction, but since I have become Dr. Bates' assistant, I know that she was doing the natural thing.

If all mothers would watch their babies as they begin to notice things and avoid any possible stare by just attracting the baby's attention to various things instead of just one thing, I believe that a great deal of

squint could be avoided, as well as other eye troubles. Of course there are squint cases which have been brought on through illness or injury of some kind, but even these cases can be eventually cured by teaching the patient how to shift and blink and avoid the stare.

I informed this patient that her principal trouble was staring and that I noticed it more on her second visit than I did at first. She was told to close her eyes and while they were closed to remember a white cloud or a piece of white cloth, such as her handkerchief, which was in her lap at the time, then to open her eyes and instead of looking directly at the fine black print she was told to look at the white spaces, and then close her eyes again and imagine them as white as her handkerchief.

She said she could remember a white cloud much better while her eyes were closed. While looking at her handkerchief she could see it perfectly white, but when she closed her eyes the memory of the white handkerchief was not so good. She said the whiteness became a sort of grey or soiled white, which made her uncomfortable while her eyes were closed. This proves again that Dr. Bates is right in saying that an imperfect memory of anything brings on strain and imperfect sight.

At first she could not do so well with the white spaces of fine print as she held the card six or eight inches from her eyes. We tried the other extreme then by placing the card close to her forehead, too close for her to read the fine print, even if she had no

trouble with her eyes. She was directed to move the card slowly, slightly touching her forehead over the bridge of her nose and opening her eyes with the slow movement of the card and closing them again. In this way she got flashes of the white spaces, and as she closed her eyes the memory of the white spaces improved so that when she drew the card away finally after practising this method for ten or fifteen minutes she could read the fine print at six inches as well as she could at twelve inches. Again she became excited as she did the day before and felt that at last she had grasped the idea of avoiding the stare and that she would not need come again.

Two days later she telephoned to me for another treatment, saying that she could not retain the good sight that she had while practising with me. When she came for her third treatment, I tested her sight with the large test card, using various cards that I had. She did very well with the two cards she had read at her first visit, but with the strange cards her vision was the same as it was during her first visit, 15/20.

I decided to try a different method of treatment by having her imagine that my room was her tea room. A desk and small table with a few chairs were imagined to be a table at which she was to place imaginary patrons who were coming towards her. She told me that it was customary for her to have a napkin in her hand which served sometimes to wipe the top of a glass or to rearrange a plate on the table. I gave her a towel to hold which served as a napkin and told her to

shift from the napkin to the imaginary table, and in this way she learned how to shift and blink as she would have to do to retain her relaxation while at work in the tea room. She remembered this lesson very well and did her work in the tea room better for a few days.

When I saw her again, which was in less than a week's time, she said that she got along splendidly in the mornings, but in the afternoon after she had been busy for part of the day, she felt a strain coming on as usual, which caused a great deal of tension at the back of her head.

The method that we used that day at her fourth visit was used again at her last visit, the fifth treatment, when she did so well that I thought it unnecessary for her to come again. There were several pictures hanging on the wall of my room distributed in different places. I told her to imagine that she was in her stock room where canned goods were stored. She explained how there were rows of canned tomatoes, which had the picture of a red tomato on the label. Then there were other shelves arranged with cans of peas, which, of course, were green. There were shelves in another section of the room with canned vegetables, with various coloured labels.

I told her to stand in the centre of the room and to sway her body from left to right, blinking as she swayed and shifted from the canned peas to the canned tomatoes and other canned goods with various coloured labels. She remarked that if she could keep up that

good feeling of relaxation and freedom from tension and strain while she was practising in the stock room of her establishment, she would be amply repaid for the time she spent with me.

Her report over the telephone a few days later was favourable. She said that she had taken her car with friends and had driven many miles over a mountain trail, and if it had not been for her ability to blink and shift, she could not possibly have avoided an accident which would have thrown her car over the cliffs. I had told her to occasionally shift from the speedometer to the centre of the road ahead and *vice versa*. I told her to remind herself continuously that it was not necessary to hold on very tight to the steering-wheel, but to hold it loosely, which meant relaxation.

She said that her store room, she believed, was responsible for the absence of strain and tension late in the afternoon, when before she had seen me there was not a day that she was free from pain in the back of her head. She wore a fancy white apron during business hours, but always in the little pocket of her apron rested the small test card and a small fine print card which she would use when she had the opportunity to do so practising shifting from the white spaces of the fine type to sections of the room, which helped her to see things clearly and without strain.

I hope this article will be of benefit to those who do close work in offices, as well as to people who do similar work to that of my patient."

CHAPTER V

Treatment of Eye Troubles

In Ophthalmology, as well as in general medicine, there are a multitude of remedies but a small number are of proven value. A much larger number are of slight or questionable value. Certain drugs and formulae find favour with some ophthalmologists, while with others they never receive a trial. One great danger in medicine is the falling into a therapeutic rut. The preservation of an open mind, and willingness to give a trial to the untried, is a valuable asset. We would warn against the therapeutic nihilist on the one hand, and the extreme enthusiast on the other. I shall mention certain drugs which have proved valuable in Dr. Agarwal's Eye Institute though great interest is being shown in natural treatment and hygienic measures side by side. Glasses and operations have also their value but their use should be limited and stress should be made on the practice of relaxation methods and hygienic measures along with the use of glasses.

The curative treatment may be divided under the following headings :—

1. Relaxation methods
2. Hygienic measures
3. General treatment

4. *Medicinal treatment*
5. *Operations*
6. *Glasses*

Relaxation Methods

We have studied that loss of central fixation is invariably found in all eye troubles. Therefore, any method which improves central fixation will be helpful in curing the eye troubles. The aim of all the relaxation methods is to teach the eye and the mind how to improve central fixation without an effort to see.

1. CENTRAL FIXATION.

By central fixation is meant the ability of the eye to look directly at a point, and while doing so to see best with the centre of the sight in the retina. The letter regarded is seen better than the rest of the letters. When the top of a small letter of the Snellen test card at ten or twenty feet is regarded by central fixation, the bottom of the same letter appears less black, but the whole letter is clearer, the black appears a darker shade of black, and the white part of the letter appears whiter. The eyes feel no strain.

When the ability of the eye to see the point regarded best is suppressed partially or completely, the condition is called eccentric fixation. The vision for letters or words is always less distinct than with central fixation. The edges of the letters are not clean cut and have a fuzzy or shadowy margin. The size of letters is altered: they appear larger or smaller than with normal vision. Their shape is distorted; a square

letter may seem to be round. Floating specks may occur. Two or more images of one letter may be seen. Pain, fatigue, tension, or discomfort of some kind is usually felt in the eyes during eccentric fixation.

The following procedures are recommended for obtaining central fixation. The patient is told to look at a light at twenty feet or greater distance, then to look a foot or further to one side of the light until it appears less bright. By practice and by increasing or lessening the distance of the point fixed to one side, the patient may soon become convinced that the light is seen best by looking straight at it.

To improve central fixation it is necessary to take the help of a Snellen test card. Take the card in your hand. Keep your sight just below the letter 'C' on the white background. While keeping the sight below the letter, whole of 'C' is visible but the bottom part of 'C' appears more distinct than the top part of 'C'. Now shift your sight to the white background just above 'C' and note that the top part of 'C' has become more distinct than the bottom part of 'C'. In this way shift your sight three times from bottom to top and top to bottom of 'C'. Similarly practise on the smaller letters up to the sixth or seventh line of the Snellen test card. If the part of the letter regarded does not appear best, close the eyes for half a minute and remember the black or white colour, then open the eyes and practise on the letter. Then increase the distance of Snellen test card to 2, 3, 4, 5, 6, 7, 8, 9, 10 feet gradually and practise central fixation. While practising central fixation palming may be done at times.

If you find difficulty in regarding one part of a letter best, regard one letter of a line in such manner that the one following it appears less distinct.

To improve central fixation on the reading matter of the book, keep the sight just below the line of letters and shift the sight from one end of the white line to the other. Note that each word coming nearer the sight appears more distinct than the others. Blink gently.

2. PALMING

All the relaxation methods are simply different ways of relieving the strain, and most patients, though by no means all, find palming as the easiest method of relaxation. In palming when the eyes are closed and covered with the palms avoiding pressure on the eye-balls, one sees a black field before the eyes; but when the eyes are diseased or the mind and eyes are under strain, patients fail to see black, but see other colours. Such patients are greatly helped by the memory of a black object—black velvet, silk, ink, letters on the Snellen test card, cap, curtain etc. A familiar black object can often be remembered more easily by the patient than those that are less so. A dressmaker, for instance, was able to remember a thread of black silk when she could not remember any other black object. The patient is directed to look at such an object at the distance at which the colour can be seen best, and then to close the eyes and remember the colour. He repeats until the memory appears to be equal to the sight. Then the patient is instructed to cover the closed eyes

with the palms of the hands in the manner just described. If the memory of the black is perfect, the whole background will be black. If it is not, or if it does not become so in the course of a few seconds, the eyes are opened and the black object regarded again.

The longer some people palm, the greater the relaxation they obtain and the darker the shade of black they are able both to remember and see black. Others are able to palm successfully for short periods, but begin to strain if they keep it up too long.

3. SHIFTING AND SWINGING

The normal eye has normal sight when it is at rest. It is at rest or relaxed, when it is moving to prevent stare, strain, or effort to see. Shifting or moving the eyes from side to side with a corresponding movement of the head improves the sight when done properly. It is done wrongly when the eyes move in a different direction from the movement of the head; while turning the head to the right, the eyes turn to the left. Cases have been observed where one or both eyes appear stationary while the head may be moving. In some cases the eyes would move irregularly and unconsciously a longer or shorter distance than the movements of the head.

When the eyes and head move from side to side or in other directions, stationary objects appear to move in the opposite direction. This illusion or the apparent movement of the objects is called swinging. Like many things, the swing can be done wrongly as well as rightly. To be able to practise the swing

rightly is a great help to the eyes. The patient can stand beside his table while moving the body, head and eyes from side to side. He can notice that the table and other things in front of him are moving in the direction opposite to the movement of his body. When he looks out of the window, the curtain cord, the vertical bars and other parts of the window will appear to move in the opposite direction, while more distant objects, buildings or trees will appear to move in the same direction as he moves. While walking straight ahead, one can notice that the floor appears to move towards him. If the patient is conscious of the movement of the floor and other objects, the stare and strain is prevented, and the vision is always improved; but if he does not notice the movement of objects when he himself moves, he is apt to strain.

Some people have difficulty in imagining any stationary object to be moving. They feel absolutely certain that the stationary object is always stationary and cannot be expected to move when the body sways from side to side in a long or short movement. It is absolutely necessary that all persons with imperfect sight should become able to imagine stationary objects to be moving. A very successful method of teaching nervous people how to imagine stationary objects to be moving is as follows:—

The Snellen test card is fastened to a support about fifteen feet away from the patient. When the patient looks at a point about three feet to the right of the test card, the card is to the left of the point

regarded, and advances farther to the left when the point regarded is moved to the right. When the patient is directed to regard a point to the left of the Snellen test card, the card moves to the right side of the point regarded.

The greater the shift from one point to another, the wider becomes the swing. By repetition, the patient becomes able to realize that whenever a point regarded is to the right of the card, the card and all other objects are to the left of the point regarded. When the eyes move to one side of the card, the card moves to the opposite side and this movement of the card can always be demonstrated.

This method is always a truth without any exceptions because no matter how much the patient may insist that he is right, he has to acknowledge that when he looks to the right, the Snellen test card moves to the left and this movement is so decided that it very soon becomes impossible for the patient to fail to imagine stationary objects to be moving whenever the eyes move from right to left, or from left to right, or in any other direction. This demonstration may be made very convincing with a little time and patience.

The shorter the swing, the greater the benefit to the eyes; but it is interesting to observe that swinging the head and eyes a long distance from side to side is more easily accomplished than a short movement. Swinging can be practised both with the eyes open and closed.

Long Swing

When the shifting of the sight is more than an inch, it is called long swing. Long swing is useful in relieving eye discomforts and headache, and helps to adopt a short swing by shortening the long movement.

Short Swing

When the shifting of the sight is less than an inch it is called short swing. Short swing improves the vision.

4. MENTAL PICTURES

The mind is busy as long as we are awake. We remember many things and are consciously or unconsciously shifting from one thing to another. Those things that we remember or imagine mentally are called mental pictures.

Mental pictures are very important. For example, if a patient can remember and imagine a black letter or other object perfectly with the eyes closed and with the eyes open, the patient has a normal eye with normal sight ; but if the same patient remembers or imagines a letter or other object imperfectly, the vision becomes imperfect, a change takes place in the normal shape of the eyeball and the eye becomes imperfect—too long, too short, or of an irregular shape. Imperfect memory increases the hardness of the eyeball and produces other disagreeable symptoms and pain.

To obtain perfect mental pictures requires a perfect relaxation. If the patient can see at the near point a small letter 'O' with a white centre whiter

than it really is, or whiter than the rest of the white card, it is usually possible to close the eyes and remember or imagine a perfect mental picture of the letter.

To many patients the memory of a small black dot is the best mental picture. When the mental picture of a dot is perfect, the dot appears to move with a slow, short, easy swing. Any effort to remember or imagine the dot impairs the mental picture. The vision of a perfectly black dot may be used to improve the vision of large letters or other objects. By practice, one becomes able to remember or imagine a perfect dot at all times and in all places when desired. The memory of a black dot is beneficial also in other ways. When the eyes are tired, the perfect memory of a dot at once brings a feeling of perfect rest. Symptoms of various diseases of the eye have been relieved at once by the memory of a perfect dot.

To some patients mental picture of a black object produces strain while the memory of some pleasant scenery or beautiful colours which are remembered without effort give relaxation. There are certain shades of colours which do produce mental strain and at the same time cause lowering of the vision. Green, no matter what shade of green it may be, is usually a rest and relaxation to the mind and eyes.

5. WHITE LINE

The white space in between the lines of print is called the white line. If one can imagine a thin white line in this white space below the letters of the test card or beneath a line of fine print, it is very helpful.

This thin white line is only imagined, it is not seen, because the line is not really there. It is valuable in the treatment and cure of presbyopia, hypermetropia, astigmatism, many cases of myopia and other eye troubles. One should imagine it in the right way. The wrong way is to try to imagine the thin white line and the black letters at the same time. This causes a strain which always blurs the black letters and prevents the thin white line from being imagined.

Many patients complain that they have difficulty in imagining the thin white line. To overcome this, one should imagine it just below some word or collection of words which are known. The line is then readily imagined and it can be imagined extending from one side of the page to the other, and wherever it becomes manifest the vision is always improved. One can read rapidly, clearly, and without discomfort, when he is conscious of the thin white line, but to fix the sight on the black letters and expect to read them is a mistake which very few teachers or students have observed. The fact that one cannot read properly when looking at the black letters should be more widely known. Much time has been lost in the classroom by teachers trying to force the children to look directly at the blackness of the black letters. When black letters are regarded and seen best, much pain, discomfort, or imperfect sight is experienced.

One cannot be sure when imagining the thin white line that the eyes are directed towards it. When one plans to look at the thin white line and while trying to

read something feels discomfort or pain, it means that the eyes are not directed on the thin white line as the reader may imagine.

If the patient cannot imagine the white line easily, he is told to close his eyes and think of a series of white objects: he may recall a white-washed wall, a white cow or bull, or a pot of white paint. He is then directed to open his eyes again and look at the white spaces, imagining them to be as white as the white objects he remembered. He is told to close his eyes again and imagine that he has a pot of white paint and a fine pen and that he is drawing a thin white line beneath a line of print, then to open his eyes and imagine that he is drawing a white line beneath each line of letters on the fundamental card as he moves his head from side to side. He is told to blink as he shifts from one end of the line to the other, to occasionally look away and to close his eyes frequently for half a minute or so to rest them.

By practising in this way, letters which could not be seen before appear black and distinct. As one's ability to read is improved, the card is brought closer and the patient is instructed to practise in this way, until the entire card can be read at six inches from his eyes.

Hygiene of the Eyes

EYELIDS—Eyelids play a great part in vision. The upper eyelids should remain downward, keeping the eye half open. While looking upwards or in front

the upper lids should not be raised, but only the chin. It is very important for patients to keep the lids in the right position and blink frequently.

BLINKING —The greatest things are always the simplest. The act of blinking is the first and simplest, and a most important action of the eyelids. In blinking the upper eyelid comes a little downwards to cover the pupil and is again raised. Wrong blinking is usually very irregular and jerky. Blinking is a quick method of resting the eyes and can be done unconsciously all the day long irrespective of what one may be doing. It is interesting to observe the blinking demonstration.

Look at any letter. Stop blinking, note that the blackness of the letter begins to fade. Now blink and note that the blackness reappears.

See how the eyelids work in a tiny baby who has not yet lost its natural impulse and acquired the vicious habit of staring. You should blink at least ten times a minute.

READING—Keep the book at the lower level than the chin so that the lids may not be raised. Then blink twice at least in reading one line. Do not read in the sun because the glare reflected from the paper causes strain to the eyes. Reading while lying can also be done without any discomfort, but you may keep the head raised and blink frequently. It is a great mistake to stop blinking while reading. Fine print reading is an aid to eyesight.

WRITING—While writing, keep the sight on the point of the pen and move your sight with its

movement, and blink frequently. A common mistake is to write forward and at the same time to look at the back letters.

SEWING — Many women suffer from eye strain while sewing or doing needle work. They generally feel headache after working even for a short time. The mistake they commit is that they keep their eyes fixed on their work and blink at long intervals. They should blink frequently and move eyes with the movement of the needle. If the needle comes up, the eyes also should move up and when the needle goes down to the cloth, the eyes should shift to the cloth. This shifting relieves the strain.

CINEMA — Cinematograph pictures are commonly supposed to be very injurious to the eyes, and it is a fact that they often cause much discomfort and the lowering of vision. They can, however, be made a means of improving the sight. When they hurt the eyes, it is because the person strains to see them. If this tendency to strain can be overcome, the vision is always improved and if the practice of viewing pictures is continued long enough, many eye troubles are relieved.

HOW TO SEE A CINEMA PICTURE? — Sit erect comfortably, keep your upper lids down while raising the chin and blink frequently.

The common mistake while seeing the cinema is to keep the lids raised and stop blinking.

SUN TREATMENT — The sun is a wonderful help in relieving all sorts of eye discomforts. Sometimes we get miraculous results. Everyone should face the sun.

Sit comfortably facing the sun with closed eyes. Sway the body from side to side gently. Continue for ten to thirty minutes. Morning or evening time, or when the rays of the sun are not keen, is the best time. One should stop sun treatment as soon as the sun causes discomfort to the body. After enjoying the sun, come to the shade and wash the eyes with cold water to which an eye-wash may be added.

EYE-WASH — Eye-wash is very effective in toning up the eyes. It gives relaxation. You may splash cold water on your eyes gently. Or fill an eye-cup with cold water and put it against the eye in such a way that the lower margin of the eye-cup touches the lower eyelid while the upper margin of the eye-cup remains free. Keep the eyes downwards and blink in the water of the eye-cup. Wash each eye for about a minute or two. Fixing the eye-cup against the eye and raising the head are not desirable.

CHAPTER VI

General Treatment

1. DIET

Regulation of diet is very helpful in the treatment of most of the troubles of the interior of the eye and retinal diseases. By overeating or eating unbalanced food the mind may get strain and the blood circulation of the eye may be affected.

The diet should be light and easily digestible, not rich in fat and sugar, but consisting chiefly of milk, green vegetables and fruits. Whole wheat preparations are to be preferred. Whatever food is taken, take it in a suitable quantity, and at sufficient intervals. Fruit juice mixed with equal quantity of water or water with a little lemon juice may be taken every day. Drinking one glass of water in the morning and one at the time of going to bed, helps in the movement of the bowels.

Vitamin A is essential for the normal fuuction of the retina and it is helpful in retinal diseases. Vitamin A is present in cow's milk, carrot, cod-liver oil, butter, pineapple, fish etc. Abidol, Netrovit and Triphala Ghrita are medicines containing Vitamin A.

2. DEEP BREATHING

Deep breathing is very effective in improving the accuracy and sensitiveness of the eyes, nerves and mind.

The following suggestions will prove helpful in the practice of deep breathing.

- a.* Avoid all tight clothings.
- b.* Open all the windows of the room or select an open space free from draught.
- c.* During breathing keep the mouth closed.
- d.* Pay more attention to exhalation than inhalation.
- e.* Avoid quick and jerky breathing.
- f.* The abdomen should be kept compressed during breathing.
- g.* One must not be satisfied with the few minutes of breathing exercises, but one should make a habit of conscious deep inspirations and expirations several times in the day.

RABBIT'S THROAT—This is a method of deep breathing. It consists of depressing the lower jaw with the lips closed and lowering the tongue and muscles below the chin. At the same time one breathes in through the nose and throat in a manner somewhat similar to snoring and when done properly one can feel a coolness of the air while it passes down into the lungs. This method of breathing is accompanied with the eyelids being more widely open in a natural way without staring. The air passages, nose and throat dilate. The tube which goes from the throat to the middle ear becomes more widely open, with the improved hearing in chronic deafness which does not respond to any

other treatment. If one rests the chin with the thumb below it and the forefinger just below the lower lip, one can feel with the thumb the hardening of the muscles below the jaw accompanied with a decided swelling. By practice, the swelling and hardness increase. This suggested the title of the Rabbit's Throat because of a similar swelling below the rabbit's chin. The tension of the other muscles of the body becomes relaxed. There is a wonderful increase of muscular control.

The following breathing exercises are quite simple and are performed while standing :

1. With hands at sides, inhale and exhale slowly and deeply.

2. Stand erect, arms at sides. Inhale, raising the arms forward and upward until the palms touch above the head, at the same time raising yourself up on the toes as high as possible. Exhale, lowering the toes, bringing the hands downward in a wide circle until the palms touch the thighs.

3. Stand erect, with the hands at shoulders. Inhale, raising elbows sideways; exhale, bringing elbows down.

3. TREATMENT OF CONSTIPATION

Constipation usually causes or increases the mental strain. It should be treated especially in the cases suffering from the disease of the retina and glaucoma etc. Constipation may be treated by regulating the diet, by purgatives such as milk of magnesia, senna powder, triphala, fruit salt etc. Enema once a

week or more frequently is generally very useful in many cases. Take about two pints or one seer of luke-warm water for the enema and add to it the juice of two lemons or two tea-spoonfuls of sodium chloride

4. EXERCISE

Walking or gardening is a good exercise. Walking or running on the green grass relieves the strain. While walking or running imagine the ground and side objects to be moving backwards.

5. MASSAGE

Massage of the whole body, especially of the head, improves blood circulation and produces relaxation. The top of the head is massaged by rapid, gentle and light rubbing movement of the fingers. Some hair oil or Occulo Coolex may be used for massage. Occulo Coolex may be prepared by mixing about five grains of menthol in one ounce of sweet oil. While the head is massaged, the eyes are to be kept closed. It is good to apply a little water on the head before the application of the oil. The forehead may also be massaged at the same time. Usually seven to ten minutes are sufficient for the massage of the head.

In forehead massage move your body gently from side to side and keep the eyes closed. Place the tips of the fingers lightly on the forehead and allow the forehead to move freely beneath the fingers. When successful, the fingers appear to move in the opposite direction. It is good to get the massage done by someone else.

Massage of the head and the forehead relieves the strain and proves very efficacious in relieving headache and pain in and around the eyeballs.

6. VAPOUR BATH

Vapour bath is a good method to relieve the spasm of the muscles to absorb the blood in haemorrhages, and to improve the blood circulation. The process is as follows :

(a) Take an electric kettle or a bronchitis kettle or a jug containing some water. Let the water boil. One or two crystals of menthol may be added to the boiling water.

(b) Sit before the vapour, and cover the head and the kettle with a thick cloth so that the vapour may not pass out. Take the vapour on the face. While taking the vapour bath breathe deeply and blink frequently. Take the vapour bath till perspiration comes out.

(c) After the vapour bath wipe out the perspiration and wash the face with cold water. The water may be splashed against the eyes and faces, or the face may be dipped several times in a basin full of water.

7. NASAL DROPS

The nasal drops are used to irritate the nose and the throat so that the patient may be able to expel the discharge. The nose and the throat are the passages through which the toxic matter from the tissues of the eye and its surroundings is expelled and fresh blood

circulation takes place. Such drops are very useful when the tension is high or the eye is red and painful or when the retina is diseased. The drops are put in the nostrils by a dropper when the stomach is empty, preferably after vapour bath. Four to ten drops may be dropped in each nostril. The patient should sit in a warm place and then bend his head backwards. Any of the following nasal drops may be used :

(a) Lemon juice mixed with equal quantity of water.

(b) 2 to 5 grains of dry ginger powder mixed with one tea-spoonful of boiled milk.

(c) The skin of a soap-nut (ritha) soaked in two drams of water for twelve hours and filtered.

(d) Sadabindu oil which is an Ayurvedic preparation.

8. LEECHES

When there is severe pain and deep inflammation of the eye as in acute glaucoma or in iridocyclitis, a beneficial effect is often produced by the abstraction of blood. Two or three small leeches are applied to the temple or to the upper lid. After an interval the bleeding may be repeated.

9. TONICS

Selection of tonics is a matter of choice. They prove very useful for anaemic patients or for patients in whom there is deficiency of vitamins.

CHAPTER VII

Medicines

1. EYE WASH

The eye cup is a popular means for washing the eye. Fill the cup with water and add to it a few drops of the eye wash solution by the dropper. Then put it against the eye gently. Its lower margin touches the lower eyelid while the upper margin remains free. Keep the eyes downwards and gently blink while washing the eye. Wash each eye for about two minutes or more. The following eye-wash solutions may be used:

(a) Sodium chloride	..	..	grain X
Soda bicarb	..	..	grain X
Distilled water	..	..	ounce I

10 to 20 drops of it are added to an eye cup full of water.

(b) Soda biborate (Borax)	..	grain VI
Soda bicarb	..	grain VI
Sodium chloride	..	grain VI
Witch Hazel (Hazeline)	..	minim XCVI
Distilled water	..	ounce IV

Take water, preferably lukewarm, in an eye cup and add to it 20 to 30 drops of this lotion. Wash the eye as directed above. This is a soothing eye wash and is very useful in simple conjunctivitis.

- | | | | |
|---------------------|----|----|------------|
| (c) Sodium chloride | .. | .. | grain LX |
| Cold boiled milk | .. | .. | ounce VIII |

Useful in conjunctivitis, trachoma and redness in the eyes.

- (d) Amla — Eblic Myrobolan
 Harr — Myrobolan
 Bahera— Myrobolan Beliric

Take equal parts of Amla, Harr and Bahera. Wash them with water and then dry. Prepare coarse powder. Take one tea-spoonful of this powder and add to it two ounces of water. Let it remain for the whole night in a small earthen or glass pot with a cover on it. Filter the lotion in the morning and use it for eyewash.

2. EYE-DROPS

(a) William's Modified Drops

- | | | | |
|-----------------|----|----|---------------------|
| Cocaine nitrate | .. | .. | grain $\frac{1}{2}$ |
| Boric acid | .. | .. | grain XII |
| Sodium borate | .. | .. | grain X |
| Camphor water | .. | .. | dram II |
| Distilled water | .. | .. | ounce I |

This is an agreeable and soothing eye-drop to use after silver nitrate, zinc or other irritating drops have been instilled.

(b) Collyrium Flavum

- | | | | |
|----------------------------|----|----|-----------|
| Phenol | .. | .. | grain I |
| Fluid extract of hydrastis | .. | .. | minim III |
| Witch hazel water | .. | .. | minim XXX |

Boric acid	..	.. grain X
Distilled water	..	.. ounce I

These drops have a momentary sting, which is replaced by a cool, pleasant sensation.

(c) Zinc Drops

Zinc sulphate	..	.. grain I
Distilled water	..	.. ounce I

This is very useful in conjunctivitis, especially when little secretion is present.

(d) Camphor Drops

Acid tannic	..	.. grain $\frac{1}{4}$
Zinc sulph	..	.. grain $\frac{1}{4}$
Aqua Camphor	..	.. dram II
Distilled water	..	.. dram IV

Useful in simple conjunctivitis.

(e) Silver Nitrate Drops

Silver nitrate	..	.. grain II
Distilled water	..	.. ounce I

Useful in conjunctivitis and trachoma.

(f) Argylol Drops

Argylol	..	.. grain X
Distilled water	..	.. ounce I

Useful in conjunctivitis and trachoma.

(g) Atropine Drops

Atropine sulphate	..	.. grain II
Distilled water	..	.. ounce I

These drops dilate the pupil and are chiefly indicated in iritis for dilating the pupil.

(h) Eserine Drops

Eserine salicylate	..	.. grain I
Distilled water	..	.. ounce I

Eserine drops diminish the size of the pupil and are used chiefly in glaucoma.

(i) Pilocarpine Drops

Pilocarpine nitrate	..	.. grain II
Distilled water	..	.. ounce I

These drops also contract the pupil and are used in glaucoma.

(j) Cocaine Drops

Cocaine Hydrochloride	..	.. grain IV
Distilled water	..	.. dram II

Cocaine drops are commonly employed for producing local anaesthesia during operations upon the eye.

(k) Antiseptic Drops.

Mercurochrome	..	.. grain IV
Distilled water	..	.. ounce I

Useful in acute conjunctivitis and ulcer cornea.

(l) Adrenalin Drops

Liquid adrenalin is a valuable astringent and haemostatic. It is used in operations. It proves very useful in subjective conjunctivitis.

3. HONEY APPLICATIONS

Medicines prepared in honey prove very useful. They are applied to the eye by a rod. Their application just before the sun treatment proves very efficacious. *Resolvent 200, Resolvent 500 and Opacitox Occulose* are

the patent medicines of Dr. Agarwal's Eye Institute made with honey.

(a) Sodium chloride	..	..	grain XXX
Honey	..	..	ounce I

Useful in defective eyesight, floating specks, after cataract operation.

(b) Dionin	..	..	grain X
Honey	..	..	ounce I

Useful in defective eyesight, opacity cornea, early cataract.

(c) Sodium chloride	..	..	grain XXX
Sulphate of iron	..	..	grain XXX
Honey	..	..	ounce I

Useful in old pannus.

(d) Onion juice	..	..	dram I
Ginger juice	..	..	dram I
Honey	..	..	ounce I

Useful in night blindness and diseases of the retina and choroid.

(e) Chandrodaya powder (Ayurvedic preparation)	..	..	dram I
Honey	..	..	ounce I

Useful in cataract, opacity cornea, trachoma.

POWDERS or SURMAS

(a) Menthol	..	..	grain VIII
Black antimony	..	..	grain V
Calomel	..	..	dram I

Useful in defective eyesight, spring catarrh, scleritis, conjunctivitis and trachoma.

(b) Black antimony	..	..	dram I
Potassium nitras	..	..	dram I
Camphor	..	..	grain VI

Useful in defective eyesight.

(c) Sodium chloride	..	..	dram IV
Turmeric (Haldi)	..	..	dram I

Useful in night blindness and diseases of the retina.

(d) Kajal or black powder	..	..	dram I
Menthol	..	..	grain III
Camphor	..	..	grain III

Useful in conjunctivitis and for beauty.

OINTMENTS

(a) Aristol Ointment

Aristol	..	..	grain I
Olive oil	..	..	minim XV
Lanoline	..	..	ounce I

Of service after injuries, burns and operations.

(b) Atropine Ointment

Atropine sulphate	..	..	grain I
White vaseline	..	..	dram II

Of service for dilating the pupil and in iritis.

(c) Atropine and Dionin Ointment

Atrophine sulphate	..	..	grain I
Dionin	..	..	grain II
White vaseline	..	..	dram II

Of great service in iritis and iridocyclitis.

(d) Boric Ointment

Boric acid	grain IV
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White vaseline	dram II
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Applied in conjunctivitis at bed time.

(e) Copper Citrate Ointment

Copper citrate	grain I
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White vaseline	ounce I
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Useful in chronic conjunctivitis and trachoma.

(f) Menthol Ointment

Menthol	grain V
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White vaseline	ounce I
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Useful in conjunctivitis and trachoma.

(g) Sulphonamide Ointment

Sulphonamide powder	grain XXX
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White vaseline	ounce I
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Useful in conjunctivitis, trachoma, ulcer cornea etc.

Operations

Mature cataract and some other eye diseases are usually treated by operation. The details of different operations can be studied from some book on eye operations.

In cataract the results are more favourable if the patients are put under sun-treatment and relaxation exercises for a few days before the operation and a few days after the operation. Continuous treatment after the operation relieves the glare and redness soon, and

improves the sight. Deterioration in eyesight usually happens sometimes after the operation and many lose their sight though the operation was quite successful. Such patients can be benefited by relaxation methods and sun-treatment.

Some patients who were advised by other surgeons to go under operation asked me if I could do anything for them without operation as I believed in the nature-cure. They thought that I did not approve of operations on the eye. I do believe in operations on the eye when it is absolutely necessary.

I remember an old man who was suffering from mature cataract and was afraid of any kind of operation. He had a strong belief that I could cure him without operation. After examining his eyes I told him that he required operation and there could be no escape from it. I persuaded him to undergo an operation. I showed him other patients who were suffering from entropion (inversion of the lid margin), pterygium, chalasion, dacryocystitis etc., some of whom had already gone under operation while others were on the waiting list. He was admitted to the paying cabin and the cataract operation was quite successfully performed in his right eye. On the fourth day of the operation his hand fell on the operated eye during sleep. It caused pain and discomfort in the eye. The bandage was opened in the morning. Close examination revealed that there was blood in the anterior chamber of the eye (a condition called hyphaemia). Due to presence of blood the vision was lost. He was soon treated by

vapour baths followed by atropin drops. Motions were kept clear by glycerine enemas. The blood was absorbed within a week and the eye regained its vision.

Glasses

Though the glasses act as an aid to defective eyesight and many persons do need their use after forty years of age generally but by their use the sight goes on failing, the number of glasses steadily increases, and some form of eye disease appears in many cases who are not benefited usually by the orthodox methods of treatment. It is because the strain that causes defective eyesight is not relieved. If a few minutes practice of relaxation methods as a preventive measure is carried out along with the use of glasses, further deterioration of eyesight and eye diseases arising in old age can be prevented.

In old age, glasses are usually required for reading only, but some persons, by mistake, try to see distant objects with the reading glasses; this is a harmful practice and causes rapid deterioration in eyesight. Myopic or shortsighted patients can easily discard glasses in reading. The use of glasses, as a general rule, should be limited for reading or for distance. Constant use of glasses usually worsens the health of the eyes. Many persons who need glasses can avoid their use by means of eye exercises. However, if there is necessity of glasses, their use may be permitted. If one eye is good for distance and the other for reading, glasses are unnecessary for such persons. Bifocal

glasses cause more strain than the simple ones though their use is unavoidable in case of teachers, advocates and judges who frequently shift their sight from near to distance and distance to near. The use of bifocals should be limited to such periods when their use is absolutely necessary. When a patient wants to improve his eyesight, but has to continue his work during the treatment and cannot do so without glasses, the use of glasses may be permitted for a time, and the power of the glasses may be gradually reduced.

The prescription of glasses is made with the help of the trial case and eye test cards, and by retinoscopy. The retinoscope is a very useful instrument for getting accurate results. The trial case is a box containing spherical and cylindrical lenses. For the perscription of glasses it is advisable to go to a specialist.

CHAPTER VIII

Treatment in the Clinic

After the examination of the eyes the patient is informed about the chance of his recovery and a prescription of treatment is given to him. Many cases go under practical training according to the prescription for a few days and then begin the treatment at home. Bad cases attend the clinic or get themselves admitted as indoor patients for a month or so if necessary. Rarely cases are declared as hopeless, and even then some patients try their luck and sometimes they are wonderfully benefited. For example, an editor of a weekly paper had become totally blind in his right eye due to retinal and vitreous haemorrhage in the eye and was treated by various eye specialists for many months. I too gave him no hope but he wanted to try the treatment. After a fortnight's treatment a ray of hope appeared, and by continued treatment for several months he regained his eyesight. Vapour bath, nasal drops along with relaxation methods proved very efficacious in his case.

Nearly all cases are advised to apply the medicine Resolvent 200 or 500 or Opacitox and then take sun-treatment for about ten minutes. After sun-treatment they wash the eyes with Ophthalmol or with cold water, and sit comfortably to practise palming.

After palming, swinging before a swing-stand or a window having vertical bars in it, is practised for a few minutes both with the eyes open and closed alternately, with both eyes as well as with each eye separately. Some like to practise swinging while standing, others while sitting on an armless chair. Swinging usually gives good relaxation as it gives the patient something definite to do. Patients who get strain in palming or imagination exercises often find swinging more successful than other methods, and in some cases remarkable results have been obtained simply by demonstrating to the patient that staring lowers the vision and shifting and swinging improve it. Some patients practise palming and swinging alternately several times a day. They are advised to blink frequently while swinging.

After swinging the patient practises central fixation on the big chart at a distance where his sight is best, first with both eyes and then with each eye separately, covering the other with the palm of the hand or an eye shade. Patients who feel difficulty in practising central fixation are advised to regard the white centres of the letters and imagine them whiter than the margin of the card. As the improvement progresses the chart is put at longer distances. Patients who are able to do central fixation successfully are soon benefited greatly. The patient practises palming or swinging or both at intervals while practising central fixation.

To improve the reading sight the fundamental card is placed in the hand of the patient. He is educated to move the sight on the white lines in

between the lines of print and to blink once or twice on each white line. He is advised to imagine the white lines whiter than the margin of the card. As the ability to imagine the white line is improved, he is instructed to read the letters or words while keeping the imagination on the white line. Most of the cases show considerable improvement at the first visit or in a few days, and soon become able to read the fine print and photo print.

Patients who frequently complain of constipation and feel depressed when motions are not passed, are treated with enemas or purgatives. To patients suffering from glaucoma or the diseases of retina and optic nerve, enemas or purgatives are often given. Such patients are advised to take large quantities of water with or without fruit juice and to curtail the solid diet. They are directed to avoid all food which is rich in fat and sugar.

In many cases relaxation treatment is quite sufficient to improve the eyesight but obstinate cases are treated with vapour bath sometimes followed by nasal drops. Some patients show improvement after the vapour bath and nasal drops. However, if such things are adopted wrongly, no harmful results are seen, although the patient may complain that he was given unnecessary inconvenience. The physician has to find out by intuition what particular treatment will be useful and effective in individual cases.

When the patient finishes his course of treatment, the eyes are again thoroughly examined and necessary instructions are given for home work. In some cases

glasses are also prescribed but the patient is advised to use glasses only in case of urgent necessity and to continue the medicines and follow other instructions for some time. After that period he is given general advice to read fine print or photo print regularly, do sun-treatment for a few minutes whenever convenient and to practise palming at leisure and at bed time. He is reminded to keep up the habit of blinking and to imagine the road and side objects to be moving while walking or travelling.

Experience shows that nearly all the cases are benefited more or less, and in some cases the patient and his relations say the benefits obtained are 'remarkable and wonderful'. It has been seen that there is no danger of incurring any harm by this treatment, even if no benefit results. The lines of treatment are so simple that many patients carry them out themselves, though some supervision may be required. By this routine treatment it was possible to cure many cases; but to obtain the best results, I have found it necessary to modify the routine from time to time, or to make certain changes whenever improved methods of treatment were discovered. If a patient does not respond readily to the routine treatment, it is evident that this routine is not for him and that he requires a different form of relaxation treatment. The reader may study the different modifications of relaxation methods from the book 'Mind and Vision'.

TREATMENT BY CORRESPONDENCE

It is not always possible for patients to come to Delhi for relief. As the method of treating eye defects presented in this book is new, it may not be possible to find a physician in the neighbourhood who understands it; and the patient may not be able to afford the expense of a long journey or to take the treatment away from home. Many letters are received daily from persons in various parts of India, who believe that something might be done for them by correspondence. It is true that in most cases progress is more rapid and the results more certain when the patient can be seen personally; but often this is impossible; and I see no reason why patients who cannot have the benefit of personal treatment should be denied such aid as can be given them by correspondence. I have been treating patients in this way for years, and often with extraordinary success in some cases.

To such patients I wish to give a few simple directions. They may copy the questions from the case sheet as given at the end of this book, fill it and forward it to me. If they feel any difficulty in filling it, they may consult the family physician or an eye specialist and get it filled.

A Snellen test card, a fundamental card and Photo print are usually necessary for all patients. It is better if they can study the book "Mind and Vision" to get a thorough knowledge of the relaxation methods. Resolvent 200 or 500 can be safely applied by any patient

with the help of a rod. All such requirements can be had from the office of Dr. Agarwal's Eye Institute, Delhi. When the instructions are not understood, they may be cleared up by intelligent questions which I am always ready to answer. The following letter from a patient is a good illustration :

“ Dear Dr. Agarwal,

I wanted to write to you since long, but could not do so as I cannot, according to the jail regulations, write to anyone other than blood-relatives. However, now I have got the necessary permission from the authorities to write this letter and to receive your reply there to.

You will be very happy to note that your treatment, which I learnt from Mr. Saad Ali, had marvellous results in my case. I could discard my glasses very successfully on the first day after taking sun-treatment for about 7 minutes, palming for about 3 hours and swinging. Even on the first day I read about 70 pages without glasses and without the slightest pain in my eyes or experiencing headache. Formerly these symptoms used to appear if I made an attempt to read without glasses even for 5 minutes. In addition, I also read the day's newspapers to my great surprise and satisfaction without glasses,

Probably, you might like to know my experiences regarding the method of taking treatment. During the sun-treatment, I had a very happy experience for those 7 minutes, entertaining the most romantic

company of my wife and recalling our last interview in the Female Jail as she also is undergoing imprisonment as a political prisoner! Needless to say, this happy reverie continued without any disturbance during the palming period for 10 minutes which followed immediately after the eye-wash! In the noon again, soon after the lunch, as I was taking rest in bed at the same time practising palming with a black-cloth round my eyes, I was extremely surprised to find after two hours that I had a very sound sleep and very happy dreams!

On the second day, I took the same treatment in great enthusiasm, and it was my little daughter Bharati who played the chief role of brightening up my imagination during the sun-bath, palming and even in sleep! I could notice that she was also swinging with me in fun as if sitting opposite to me as I was taking the sun-treatment. I could hear her saying in a jesting tone, "Hallo! Pappaji, are you gone mad or what?" I am sure, such happy imagination must be helping a lot in this treatment.

Later on I read your "Mind and Vision" and was satisfied that I had started taking the treatment in the correct way. I also started taking some of the exercises given therein. As I was suffering from hypermetropia, Mr. Saad Ali repeatedly insisted on my reading the Photo print. But since I experienced a headache on the first day even by merely looking at the Photo-print, I did not think of taking that exercise, thinking it unsuitable to me. However, after thoroughly reading

your said book, I again made an attempt at it. I succeeded in reading a few lines, then the first part, then three-fourth of it and then the whole of it, Now I can read it even with one eye the weaker one!

Finally, it is needless to say that my number has been considerably reduced from L + .75 to normal and R +1.0 to +.25. Probably, even the right eye must be normal now.

Thanks for all the medicines and books sent by V. P. P. Thanks also for the explanations to some of my questions sent through Mr. Saad's people. In the absence of a reasoned answer I cannot understand why palming cannot be done with a *black-cloth*.

Your treatment has been introduced in the Female Jail through my wife and I have sent your medicines to her also."

CHAPTER IX

The Imperfect sight of the normal Eye

People with normal eyes do not have normal sight all the time. It is only under favourable conditions that vision is continuously good or perfect. Some individuals may have normal sight at twenty feet, but not at a nearer or more distant point. Normal sight at twenty feet does not mean normal sight at ten feet, five feet, or nearer, or at twenty-five feet or further. What may be favourable conditions for one person may not be favourable for another or for the same person at different times.

Some people see better in a bright light while others see better in a dim light. When the eye regards an unfamiliar object, imperfect sight is always produced. Hence the proverbial fatigue caused by viewing pictures or other objects in a museum. A sudden exposure to strong light or rapid or sudden changes of light are likely to produce imperfect sight in the normal eye. Noise, unfamiliar sounds, mental and physical discomforts usually cause imperfect sight in the normal eye. During sleep the eye is rarely normal; that is why many people wake up in the morning with eyes more tired than at any other time, or even with severe headaches.

I have come across cases where the vision has become so low that there is nothing but a perception of

light though the eyes have no organic defects, in the retina, optic nerve, choroid or other parts of the eye-ball. These cases were all cured by relaxation methods.

Stories from the Clinic

I. STARING EYE.

A woman, aged thirty-five, recently came to me for treatment. She had worn glasses for more than fifteen years to improve her vision not only for the distance, but also for reading. Bifocals made her eyes feel worse and produced a greater amount of discomfort than any other glasses. Three years ago, the vision of the right eye was good and she could read a newspaper with the aid of her glasses. With the left eye she could not read, even with glasses. Her vision for distant objects was imperfect and was not improved by glasses. Sometimes the right eye had good vision, while the vision of the left eye was much less. On other occasions the vision of the left eye was good, while that of the right eye was very imperfect. She had been to see a great many eye specialists for treatment, but none had been able to fit her properly with glasses for distance or for reading. All these eye specialists admitted that they did not know the cause of her imperfect sight. She was fitted with many pairs of eye glasses, no two of which were alike. Some doctors prescribed eye drops, others internal medicines. With the hope of giving her relief from the agony of pain which she suffered, various serums were administered. Some eye specialists treated her for cataract, others for diseases of the retina, optic nerve and other parts of the interior of the eye-ball.

She was suffering from eye strain or a mental strain, which produced many different kinds of errors of refraction. When she strained her eyes, she produced a malformation of the eye-balls which caused imperfect sight. This condition had been temporarily improved by glasses. In about a week, however, the glasses had caused her great discomfort and made her sight worse.

I made a very careful ophthalmological examination, but found no disease in any part of the eye. Her eyes were normal, although the vision was imperfect.

I emphasized the fact that if she wished to be cured permanently, it was necessary for her to discard her glasses and not put them on again for any purpose whatever. This she consented to do.

The use of her memory and imagination helped to improve her vision. She committed to memory the various letters of the Snellen test card and with her eyes open, regarding each letter, her memory and imagination of the letters were good. When she closed her eyes, not only could she remember and imagine each letter perfectly black, but she also could remember the size of the letter, its location, its white centre, and the white halos which surrounded it. With her eyes closed, she could remember the whiteness of the spaces between the lines much better than she could imagine it with her eyes open.

This patient demonstrated that the normal eye is always normal when the memory or imagination is good.

When the memory or imagination is imperfect, the vision of the normal eye is always imperfect.

An unfamiliar Snellen test card was placed about fifteen feet in front of her. With the aid of her memory and imagination of a small black dot she was able to distinguish all the letters on the test card.

When this patient looked fixedly at, or centred her gaze upon, one part of a large letter of the Fundamental card at six inches, she found that it was difficult, and it required an effort to keep her eyes open, and to look intently at one point. She also found that by looking at other letters and trying to see them all at once, or by making an effort to see all the letters of one word simultaneously, her vision was lowered. When she was advised to look at the white spaces between the lines, she said that it was a rest and that the white spaces seemed whiter, and the black letters then seemed blacker. When she avoided looking directly at the letters, she became able to read some of the large print.

After she had imagined the white spaces between the lines to be whiter than they really were, it was possible for her to imagine the thin white line. This line is imagined along the bottom of a line of letters where the black of the letters meets the white of the white space. She was not always sure that she looked at the white spaces, although she planned to do so. When she tried to read and felt pain or discomfort, she was unconsciously looking at the letters; but when she looked at the white spaces and succeeded in avoid-

ing the letters, she felt no discomfort and she was able to read almost continuously without being conscious that she was looking at the letters. When she practised relaxation methods, she did not stare, nor strain nor try to see ; thus her vision became normal.

2. REDNESS OF EYE IN SLEEP AND CINEMA

The Maharani of a Native state, who was suffering from pain and redness in the eyes and imperfect sight, called me for her treatment. She suffered more when she saw a cinema film and also after sleep in the morning. She could neither write nor sew comfortably. At times she seemed to have no trouble at all with her eyes and was able to read her books without using her glasses, which she wore most of the time. She had worn glasses off and on for four years and disliked them exceedingly, because they did not relieve her discomforts. Some of her doctors treated her for trachoma for months together but she did not get any appreciable relief.

Her distant vision was 15/20 in both eyes; but she could not read fine print so well. I noted that she did not blink frequently, and that she had acquired wrong ways of writing and sewing. After cross-questions she admitted that she was not having good sleep and that she saw unfamiliar dreams which caused much mental strain during sleep.

I informed this patient that her principal trouble was straining. She was told to close her eyes and remember a white cloud or her handkerchief, then to open her eyes and instead of looking directly at the fine black

print to look at the white spaces and blink frequently. She soon became able to read the fine print and photo print comfortably.

In writing she used to see the letters or words which were already written. This was the wrong way and caused strain. I directed her not to look at the letters or words already written, but to move her sight with the movement of the pen. In sewing she fixed her eyes on the cloth. I educated her to move her eyes with the movement of the needle. This shifting of her eyes along with the needle gave her a comfortable feeling. While seeing the cinema, I advised her to keep the chin a little raised and blink frequently. One day during the course of the treatment she went to a picture house and saw the picture in the manner just described. She was surprised to note that her eyes got no discomfort in seeing the picture. The trouble after sleep was obstinate but the eye strain during sleep was finally relieved by practising the long swing and palming before and after sleep.

3. RELAXATION BY MUSIC

The following case is written by Dr. Bates' assistant: At one time a young man, aged twenty-seven years, came to us suffering from severe mental strain. His large staring eyes would make anyone uncomfortable just by looking at him. I approached him in the usual way, asking him what his trouble was. He smiled and said:

"Now, that's just what I am trying to find out. Nobody seems to want me. Everybody thinks I am crazy."

I answered, "You are wrong. I don't think you are crazy."

Just the same, this poor fellow did make me sort of creepy. I was just a little afraid of him, but did not dare to show it.

He had much to say, but the main thing he wanted me to know was that he was not insane. When he calmed down a bit, I said, "Now let me say something. I know that you are staring so badly that if you don't stop it, you can easily become insane or blind."

I asked Dr. Bates to examine his eyes and to tell me what treatment was best for him. The doctor said there was nothing organically wrong with his eyes, but that he was under a terrible mental strain. I understood very well what was before me when Dr. Bates said, "I think you had better knock on my door if the patient tries you too much."

After I had taken his name and address, I asked him where he was employed. His eyes protruded and he stared without blinking, as he answered, "Didn't I tell you that no one wants me? I cannot get any work. America is at war, does Uncle Sam want me? No, I have been to all the recruiting stations here in New York, and all of them have refused me. I want to fight for my country's flag but they won't give me a chance." He actually wept, and I could not refrain from crying too. His mind was affected, yes, but when he was calm, all he could think of was Uncle Sam, and how he wanted to fight for him. I was not acquainted with him half an hour when I understood easily enough why the

United States could not use him. He demonstrated to Dr. Bates and to me very clearly that one can not have normal vision with a mental strain. I placed him ten feet from the test card and told him I wanted to test his vision. He answered, "I hope you will be able to improve my sight, because I think my nervousness will also improve."

He read a few lines of the card, but when he reached the fifty line he leaned forward in his chair, wrinkled his forehead and his eyes began to bulge. At that moment a small mirror from my purse, came in very handy. I held it before him, and the expression of his face changed immediately from strain and tension, to a look of amazement.

He waited for me to speak, and what I said affected him terribly. He covered his face with his hands and wept. I kept very quiet, but touched his shoulder lightly to reassure him. When he raised his head a few moments later, he said: "Maybe that is why they refused me. I guess they saw what you saw. No wonder they thought I was crazy." I feared more hysteria, so I said that if he would let me help him, no doubt the United States Army would be glad to admit him into the service. He left the office after his first visit, feeling very much encouraged. I could not improve his vision beyond the fifty line that day, and I decided not to test each eye separately. All I could record was 10/50 with both eyes.

One week later he came again. Apparently he had forgotten to practise anything he was told to do. His

vision was still 10/50 with both eyes. I directed him to cover his one eye, and read the card with the other, His vision with each eye separately was the same, namely 10/50.

He told me that I had encouraged him so much that he tried again to enlist. I said, "You cannot expect to win out unless you take time to practise. This you must do all day long. When you tire of palming, keep your eyes closed and imagine something perfectly." While I was telling him all this, he had his eyes covered with his hands, and was moving his body from side to side, very slowly. What he did next certainly frightened me at first.

While his eyes were still covered, he asked me in a loud voice. "Do you mind if I sing 'America' while I am reading the card?"

I answered "No, but perhaps the other patients might object. Just wait a moment and I will ask the doctor."

Dr. Bates said if singing was his way of relaxing, by all means let him sing. That was all that was necessary. This poor fellow sang every word without a mistake. After each verse he would stop long enough to read the card. After the first verse he read two more lines 10/30. When he finished the hymn, he also finished reading the whole card without a mistake, 10/10. He blinked his eyes as he moved his body from side to side, and there came a great change in the expression of his face. I directed him to sing America when he

practised reading the test card at home everyday. He left us in a very happy mood and promised to practise as he was told.

We did not hear from him for a whole year. One day there came a letter from him, written in Bellevue Hospital, but mailed by a friend outside. He stated in his letter that he was all right, although he was confined. He also explained why he was sent there. It seems that when he applied at a recruiting station for enlistment, they found his vision imperfect. When he insisted that if they would only let him sing "America" his vision would at once become normal, the officers of the recruiting station considered this statement so absurd that they believed he must be crazy.

He was sent to the insane ward of Bellevue Hospital where he was promptly admitted. While there, he wrote a play of three acts, all about the doctors, the nurses and patients. It was well-written, and after he had persuaded some of the doctors to read it, they recommended his discharge.

He called to see us, and I found his vision was normal, 10/10.

His mental strain was relieved and did not return except temporarily, when he became excited and talked rapidly.

CHAPTER X

Presbyopia or Old-age Sight

Presbyopia is the name given to the loss of power to use the eyes at the near point, without the aid of glasses, which usually occurs after the age of forty.

The text-books teach that this change is a normal one; but it is a noteworthy fact that many other eye troubles appear at this age or develop a little later. Many cases of glaucoma start about this time, and so do many cases of cataract and inflammation of the interior of the eye. Patients with presbyopia are very likely to have conjunctivitis. They are also subject to congestion and hemorrhages of the interior of the eye.

The accepted explanation for the loss of near vision with advancing years is that it is due to the hardening of the lens, but it is quite impossible to reconcile the facts with this theory; for not only does presbyopia occur much below the age of forty, but it is often delayed beyond the age of fifty, and sometimes does not occur at all. There are also cases in which near vision is restored after having been lost. We are told that presbyopia comes early in the hypermetropic (farsighted) eye, and late in the myopic (nearsighted) eye; that premature hardening of the lens and weakness of the ciliary muscle (supposed to control the accommodation)

may cause it to appear in youth; and that the swelling of the lens in incipient cataract may account for the restoration of near vision after it has been lost; but there are still many cases to which these explanations cannot be made to apply.

It is true that hypermetropia hastens and myopia prevents or postpones the advent of presbyopia, and as myopia may exist in only one eye, without the patient's being aware of it, he may think that his vision is normal both for the near-point and the distance. There are cases, however, in which the vision has remained absolutely normal in both eyes long after the presbyopic age, and a considerable number of these have been brought to my attention. One of them, a man of sixty-five, examined in a moderate light indoors, was found to have a vision of 20/10. In other words he could see twice as far as the normal eye is expected to see. He also read diamond type at less than six inches, and at more than eighteen inches. In reply to a query as to how he could possess visual powers so unusual at his age or indeed, at any age, he said that when he was about forty he began to experience difficulty, at times, in reading. He consulted an optician who advised glasses. He could not believe, however, that glasses were necessary, because at times he could read perfectly without them. The matter interested him so much that he began to observe facts, a thing that people seldom do. He noted, first, that when he tried hard to see either at the near-point or at the distance, his vision invariably became worse, and the

harder he tried the worse it became. Evidently something was wrong with this method of using the eyes. Then he tried looking at things without effort, without trying to see them. He also tried resting his eyes by closing them for five minutes or longer, or by looking away from the page that he wished to read, or the distant object he wished to see. These practices always improved his sight, and by keeping them up he not only regained normal vision but retained it for twenty-five years.

“Doctor,” he said, in concluding his story, “when my eyes are at rest and comfortable, my vision is always good and I forget all about them. When they do not feel comfortable I never see so well, and then I always proceed to rest them until they feel alright again.”

The fact is that presbyopia is due to a strain. It is a strain similar to the one that produces hypermetropia, but differs from it in the fact that it affects chiefly vision at the near-point. This can be demonstrated with the retinoscope. When a person with presbyopia tries to read, the retinoscope will show that he has hypermetropia, but when he looks at a distant object the retinoscope will show either that his eyes are normal, or that the hypermetropia is less. Simultaneous retinoscopy is difficult in the case of a reading patient, for not only is the pupil small, but in order to find the shadow it is necessary for the patient to look in one general direction all the time, and this is not easy. It is also difficult to hold a glass at one side of the eye for the measurement of the refraction in such a way that the

observer can look through it while the patient does not. With a sufficient zeal for the truth, however, these difficulties can be overcome.

The strain which produces presbyopia is accompanied by a strain, more or less pronounced, of all the other nerves of the body. Hence the many distressing symptoms from which presbyopic patients suffer. Glasses, by neutralising the effect of the imperfect action of the muscles, may enable the patient to read; but they cannot relieve any of these strains. On the contrary they usually make them worse, and it is a matter of common experience that the vision declines rapidly after the patient begins to wear them. When people put on glasses because they cannot read fine print, they often find that in a couple of weeks they cannot do without them, cannot read the large print that was perfectly plain to them before. Occasionally the eye resists the artificial conditions imposed upon them by glasses to an astonishing degree, as in the case of a woman of seventy who had worn glasses for twenty years, in spite of the fact that they tired her eyes and blurred her vision, but was still able to read diamond type without them. This however is very unusual. As a rule the eyes go from bad to worse, and, if the patient lives long enough, he is almost certain to develop some serious disease which ends so frequently in blindness that nearly half of our blind population at the present time is believed to be over fifty or sixty years of age. Persons with presbyopia who are satisfied with the relief given to them by glasses should bear this fact in mind.

Presbyopia is cured, just as any other error of refraction is cured, by rest. But there is a great difference in the way patients respond to this treatment. Some are cured very quickly, even in as short a time as fifteen minutes; others are very slow and need the use of glasses side by side, but as a rule relief is obtained within a reasonable time.

While it is sometimes very difficult to cure presbyopia, it is, fortunately, very easy to prevent it. Oliver Wendell Holmes told us how to do it in "The Autocrat Of the Breakfast Table," and it is astonishing not only that no attention whatever should have been paid to his advice, but that we should have been warned against the very course which was found so beneficial in the case he records.

He says, "There is now living in New York an old gentleman who, perceiving his sight to fail, immediately took to exercising it on the finest print, and in this way fairly bullied Nature out of her foolish habit of taking liberties at the age of forty-five or thereabouts. And now this old gentleman performs the most extraordinary feats with his pen, showing that his eyes must be a pair of microscopes. I should be afraid to say how much he writes in the compass of a half-dime, whether the Psalms or the Gospels or the Psalms and the Gospels, I won't be positive."

Persons whose sight is beginning to fail at the near-point, or who are approaching the presbyopic age, should imitate the example of this remarkable old gentleman. Get a specimen of diamond type, and read

it everyday in an artificial light, bringing it closer and closer to the eye till it can be read at six inches or less. Or get a specimen of type reduced by photography until it is much smaller than diamond type, and do the same. You will thus escape, not only the necessity of wearing glasses for reading and near work, but all of those eye troubles which now so often darken the later years of life.

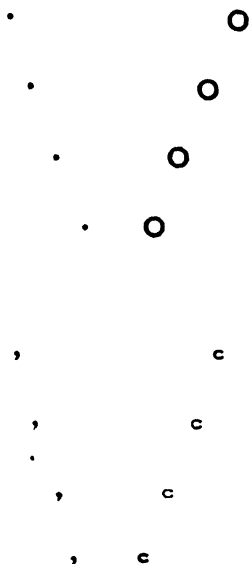
The cure of presbyopia is relaxation, and many presbyopic patients are able to obtain this rest simply by closing the eyes. They are kept closed until the patient feels relieved, which may be in a few minutes, half an hour, or longer. Then some fine print is regarded for a few seconds. By alternately resting the eyes and looking at fine print many patients quickly become able to read it at eighteen inches, and by continued practice they are able to reduce the distance until it can be read at six inches in a dim light. At first the letters are seen only in flashes. Then they are seen for a longer time, until finally they are seen continuously. When this method fails, sun-treatment and palming may be tried, combined with the use of central fixation on the Snellen eye chart at 5 to 10 feet distance. Imagination of a thin white line in between the lines of print is usually very helpful.

Many presbyopic and hypermetropic persons are benefited by the following method :

The patients are taught to practise central fixation on the letters of the Snellen test card in such a way that they see a small part of each letter blacker or

more distinct than the rest of the letter. The practice is done then on the smaller letters at ten or twenty feet. After normal vision is obtained for distance, the eye training is continued for small letters at the reading distance on the dial chart given on page 111. Then, a dot or comma is selected for eye training as given on page 103. The patient looks at the dot at twelve inches and notes the clearness of the dot with both eyes. The dot is then regarded with each eye separately. It is then held nearer and farther off until the distance is found where it appears clearest with both eyes or with each eye separately. The patient, by practising in this way with the dot soon becomes able to see it quite clearly nearer and farther than at the beginning. Then the patient looks away from the dot until he can appreciate that the dot is less black. He then regards a letter nearer the dot and notes that the dot is less black. The distance from the dot is gradually shortened, until by practice the patient can make the dot appear less black. The distance between the dot and the letter is reduced so much as the diameter of a small letter. He can now read the print. Then he is encouraged to practise holding the fine print closer to his eyes until he can read at four inches. Some patients are relieved in a few days. Permanent relief is never obtained without constant or daily practice of reading diamond type without glasses at six to twenty inches. The efficiency of the eye is very much increased, and one reads more rapidly than with glasses and without pain or fatigue.

DOT CHART



Look at the dot or comma and note that it appears clearer than the side letter. Then shift the sight to the letter and note that the letter appears more distinct than the dot or comma.

HOW DR. BATES CURED HIMSELF?

Dr. Bates was using glasses of plus three in his old age and was in search of some treatment to cure his presbyopia. He could read fine print with his glasses at thirteen inches, but was unable to read fine print either at twelve inches or at fourteen inches. The retinoscope showed that when he tried to see anything at the near-point without glasses, his eyes were focused for the distance, and when he tried to see anything at the distance they were focused for the near-point. He consulted various eye specialists but his language was to them like that of St. Paul to the Greeks, namely, foolishness. "Your lens is as hard as a stone," they said, "No one can do anything for you." Then Dr. Bates went to a nerve specialist who said to Dr. Bates that he had come to the conclusion that there was only one man who could cure him, and that was Dr. William H. Bates of New York.

"Why do you say that?" Dr. Bates asked.

"Because you are the only man who seems to know anything about it," he answered.

Thus Dr. Bates was thrown upon his own resources. One day, while looking at a picture of the Rock of Gibraltar which was hung up on the wall, he noted some black spots on its face. He imagined that these spots were the openings of the caves, and that there were people in these caves moving about. When he did this his eyes were focused for the reading distance. Then he looked at the same picture at the reading distance, still imagining that the spots were caves with people

in them. The retinoscope showed that he had accommodated, and he was able to read the lettering beside the picture. He had, in fact, been temporarily cured by the use of this imagination. Later he found that when he imagined the letters black he was able to see them black, and when he saw them black he was able to distinguish their form. His progress after this was not what could be called rapid. In six months time he could hardly read the newspaper, but in a year he could read the newspaper without glasses quite comfortably from four inches to eighteen inches. This experience was extremely valuable to Dr. Bates. Fortunately for the patients, it had seldom taken Dr. Bates as long to cure other people as it did to cure himself. In some cases a complete and permanent cure was effected in a few minutes; patients who were slow in their improvement were helped by glasses.

STORIES FROM THE CLINIC

1. One patient completed his forty-second year; at times in the night he noted that his vision remained dim for about half an hour and then became quite clear. While writing he felt pain in the right eye. He hated spectacles as they had caused deterioration in the eye-sight of some of his friends who used glasses.

The examination of his eyes revealed that the vision of each eye for distance was 10/70, and he could read photo print at twelve inches with each eye separately. I said to him, "Your eyes are quite all right but you should read photo print two or more times daily especially in artificial light. If the print is not

clear in the artificial light, read diamond type or glance at the white lines in between the lines of print. This will prevent and cure all the complaints and you may not need glasses in your life time." He then put the following questions :

Q.—Why am I not able to read clearly at times at night ?

A.—Because the focusing of the eye is not correct at that time due to strain. At the beginning of the study palm and read fine print or photo print.

Q.—Why do I get pain in the right eye and not in the left eye while writing ?

A.—There are two eyes and both function separately but the images of both the eyes are fused together by the mind. The right eye tries to see the back letters or words already written and loses central fixation while the left eye does not. The remedy is to train the eye to shift the sight with the movement of the pen, and not to try to read the back letters or words while writing.

Q.—Is intense light useful for reading ?

A.—The light may be intense or not but it should not glare and cause reflection. For example, if you read in the sun, the eyes are soon tired and the vision becomes dim ; because the glare reflected from the paper causes strain ; but you can read quite comfortably in the shaded light of the sun. Similarly, if you read under a strong electric light falling directly on

the paper, it will cause reflection of the glare and eye strain. The arrangement of the light should be such that it does not fall directly on the paper.

Q.—Can I use dark glasses in the bright sun?

A.—The bright sun cannot trouble you if you frequently blink and keep the upper lids down; but if you cannot control the wrong habit of opening the eyes widely while in the sun, then mild shaded dark glasses as Crooks B may be used.

2. A man had difficulty in reading in the artificial light and consulted an eye specialist who prescribed glasses for him for near work. The doctor assured him that he might be able to discard the glasses after some time, and if he lived long enough he would have what is called "second sight."

There is not much harm if the correct glasses are used only when it is absolutely necessary. If the wrong glasses are prescribed or if the glasses do not fit well, the patient usually suffers from headache or his eyes are soon tired. Patients who have myopia or near-sight sometimes obtain normal vision just by removing glasses and not wearing them again for reading.

This patient used the glasses for reading according to the instructions of the doctor but felt tiresome after reading for an hour or so. After sometime headache also developed. Then he consulted another eye specialist who prescribed bi-focals. His vision and headache became worse and worse and he had to change his glasses quite frequently according to the instructions of the doctors.

I tested his vision on the Snellen test card and it was recorded as 10/20 with each eye. He could hardly read No. I Fundamentals without glasses, and No.8 with glasses. To relieve his headache and tiresomeness I asked him to practise the long swing before a window. As he swayed from side to side the window bars appeared to him to be moving in the opposite direction. Then I placed him before a long mirror. He stood with his right leg out about a foot farther than the left. I told him to look at the tip of his shoe as he swayed forward, and to look in the mirror at the top of his head as he swayed backward. After practising long swing for about ten minutes he felt good relief.

The next procedure was to practise palming. While palming he was seeing floating clouds of gray instead of black. To improve palming I directed him to look at the Snellen test card letters at about five feet distance with central fixation. He could easily note that the part of the letter or the letter regarded appeared very black. Then he was instructed to palm again while holding the memory of the black. As he was able to keep the memory of the black, it was all quite dark before his eyes while palming.

After palming he read No. 4 of the Fundamental card but complained that the letters were gray and the letters of the rest of the Fundamental card appeared blurred and mixed I reminded him that the letters were in printer's ink which he had noted in the letters of the Snellen test card. He replied that he knew they were black and printed with printer's ink but they looked gray.

"If you know they are black, you can imagine also that they are black. Can you do that?" I asked.

"Yes," he said, "I can imagine that they are black." Then he proceeded to read them.

In a week's time he could easily read the fine print with the memory of black both in daylight and artificial light. Such quick cures are rare but some improvement has always been obtained in all cases. To such cases lower power of glasses are prescribed to use them only when necessary, and the instructions of reading fine print with or without glasses are given.

3. A man of forty-five complained of headache in reading and was frequently changing his glasses. Sometimes the pain was severe in his eyes and head. Later on he was getting disturbed sleep and suffered from insomnia. In the morning, the first thing he noted was pain.

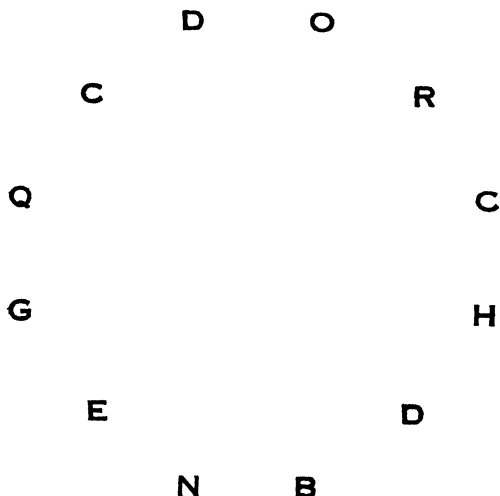
He had the habit of seeing many things at a time and in this way eccentric fixation had developed. While reading he tried to see many a word at a time. Whenever he went to the parties or to the market, he suffered from pain and dizziness because there he tried to see many persons and things at a time and lost central fixation.

Imagination of stationary objects to be moving in the opposite direction is a great help in all such cases. I directed the patient to practise the sway several times a day, before and after sleep too. He stood on his feet. When he swayed to the right the whole weight

was on the right leg; and when he swayed to the left the whole weight of his body was on the left leg. First he practised the sway with rapid and wide motion and then with slow and narrow motion. When he swayed properly both with the eyes open and closed, all stationary objects regarded appeared to be moving, and great relaxation was felt. When he practised the sway with his eyes moving in one direction and his head in the opposite direction, the result was a very bad strain which was very painful, so he condemned the wrong method of practising the sway. When this patient practised the sway properly, his pain and insomnia disappeared.

He developed the habit of short sway while sitting also, and noted that the page appeared to move in a direction opposite to that of the eye in reading. This helped to improve his eyesight. Application of Resolvent 200, sun treatment, palming, practice of white line, practice on dial chart, reading of Fundamentals were also added in the programme of his treatment. Within a fortnight he became able to read the fine print without glasses. His vision became normal both for distance and near. His imagination improved to normal as he was able to imagine the white spaces between the lines of small print, and white centres of the letters of the Snellen test card at 10 or 20 feet whiter than they really were. The eyes gained central fixation as he was able to see one letter best. But the difficulty of reading comfortably in the artificial light continued, so glasses of +1.0 were prescribed for near work.

DIAL CHART



Look at a letter and note that the letter regarded appears more distinct than the other. It will be helpful if one looks at the white portion of the letter instead of at the black. In this way look at each letter.

CHAPTER XI

Hypermetropia

Hypermetropia is the opposite of myopia. The optic axis is shortened instead of being elongated as in myopia. It is believed that hypermetropia is congenital and not acquired, though it is seen in many cases being acquired at ten, twenty, thirty or forty years of age and under different conditions of life. The majority of persons at the age of forty or over acquire hypermetropia. Some people can read the finest print in a bright light but they become hypermetropic as soon as the print is read in a dim light. This fact is usually experienced by persons approaching the old age. It is often experienced by many that the sight is normal in the beginning of reading a print but after a short period the eyes develop hypermetropia. When the normal eye tries to read an unfamiliar language, hypermetropia is produced. Many persons acquire hypermetropia when they are under worries or physical discomforts. Eighty percent of eye troubles are caused by hypermetropia. Risley believed that hypermetropia caused headache, pain, fatigue, and other symptoms to a greater degree than myopia. In the middle age many serious eye troubles as glaucoma, cataract, diseases of the optic nerve and retina, are caused by hypermetropia. Hence, it is more necessary to relieve the symptoms of hypermetropia

than those of myopia if for no other reasons than for the fact that hypermetropia is more injurious to the eyes. Eye diseases are more readily cured in the early stages than when they become chronic or serious because in the early stages the vision is slightly affected.

The cause of hypermetropia is a strain or an effort to see at the near point. By making an effort to see, central fixation is lost, the letter or the word regarded does not appear more distinct than the others not directly regarded. The patient tries to see several letters or words at a time, consciously or unconsciously. It has been found that many people have the tendency to concentrate or stare. When a letter on the Snellen test card or on the book is regarded continuously, imperfect sight is produced. Trying to keep the eye immovable causes imperfect sight. The normal eye when it is at rest is always moving and sight becomes imperfect when an effort is made to keep the sight fixed on a letter. While writing when one tries to see the black letters which are already written, hypermetropic symptoms are produced. When ladies do some fine work of sewing and keep the sight fixed at a point, they often complain of headache and eye discomforts.

Treatment by glasses for hypermetropic eyes is insufficient to obtain the best vision, and relieve or cure pain, fatigue, dizziness, double vision or other nervous troubles. It is a fact that an effort to see increases hypermetropia but it is unfortunate that the

physicians who found that a strain was bad did not try the opposite of strain—relaxation. Rest or relaxation when properly employed cures hypermetropia and relieves all the discomforts. The great difficulty is that all people are not able to rest their eyes properly and perfectly, yet many of them can be cured while others can be relieved of the disagreeable symptoms and the extent of hypermetropia can be either prevented or decreased. Cases who can not be cured of hypermetropia and feel difficulty in their work may be helped by glasses along with the relaxation treatment. Hypermetropia patients are more readily cured than those of myopia.

The prevention and cure of hypermetropia is very simple. When one practises in the right way, a cure is always brought about. Hypermetropia is cured by rest or relaxation, and cannot be benefited by an effort. Practice of central fixation and palming relieves hypermetropia.

The best methods of preventing hypermetropia are the sway, reading fine print such as diamond type, palming occasionally, and imagining stationary objects to be moving. The last one of these methods is not always easy to practise. Some cases are very obstinate without any known reason. They may try for days, without success, to imagine stationary objects to be moving. The cause of failure is usually due to concentration, staring, looking fixedly at stationary objects, and efforts to see.

When success is not attained, hold the finger about six inches from the chin while looking at distant objects

and move the head and eyes from side to side, taking care not to look directly at the finger. When this movement of the head and eyes is practised easily, continuously, the finger appears to move. This method is called the variable swing and most people have no trouble whatever in imagining the finger moving. The length of the movement of the finger is much wider than stationary objects regarded at ten, twenty, or forty feet or farther.

Practice with fine print is one of the best methods of relieving hypermetropia. The fine print is held first at the distance from the eyes at which the patient sees best and gradually brought closer until the patient can read it at six inches from his eyes. He should not look directly at the letters; he should look at the white spaces between the lines and imagine that there is a thin white line beneath each line of letters. Correct practice with fine print daily has cured many hypermetropic patients. A girl of 10, wearing glasses of +2.0 was cured in two days. A boy wearing plus six glasses was cured in a week's time.

STORIES FROM THE CLINIC

The most difficult thing for a patient to do is to discard glasses immediately. When a patient comes to us, recommended by his physician or oculist, we have no difficulty in this respect, even though he had worn glasses for many years. But when a patient comes for treatment at the suggestion of a friend or someone who has been benefitted by the Bates Method, there is sometimes a doubt in the patient's mind as to whether

it is a mistake or injurious for him to stop wearing his glasses immediately, after having worn them for a long time.

About a year ago a patient came to me. Headache, nausea, and continuous pain in the back of his neck had made him irritable and nervous, and sometimes she was not a very agreeable person to keep company with. A neighbour told him about my clinic and how his children were cured of imperfect sight.

The patient felt quite comfortable at times with the glasses he wore and because they helped him to see better he wore them almost constantly. He had worn plus glasses for more than five years and during that time he had changed them thrice. The last glasses he wore did not help when he first put them on. The oculist informed him that he would have to wear them for a few weeks until he became accustomed to them. They were much stronger glasses than those he had worn previously and for that reason the oculist told him that his eyes would adjust themselves to the glasses in time. He felt all right with these glasses for a few hours every day but towards the end of almost every day, headache, nausea, and discomfort became a regular occurrence. When he visited my office for the first time he did not know that the glasses he was wearing were the cause of his pain and discomfort. In fact he did not altogether believe that I was right in the diagnosis. Somehow I convinced him that he must put away his glasses if he wanted a cure.

On the first day I taught him to keep the upper lids down so that the eyes may remain half open, and to blink frequently. I noticed that he did not breathe regularly and advised him to do so. He made it a practice to blink as he inhaled and exhaled, so one thing reminded him to do the other. He looked into a mirror and noticed that his eyes moved slightly as he blinked, and the movement of the eyes gave him a sense of relaxation which he did not have while wearing his glasses.

The second day he wanted very much to put on his glasses again, because he woke up that morning with a terrible headache. He was almost sure that I was wrong about the whole thing. He telephoned to me and argued the matter with me. He was much surprised when I told him that he might have strained his eyes during sleep. How absurd this seemed to him, but I was right about this and I explained to him how he could be relieved of this strain.

I advised him not to sleep more than two hours at a time. He placed his alarm clock on a table beside his bed and set the alarm to ring two hours after he had fallen asleep. Being a light sleeper he wound up the alarm to ring only for a few seconds. In this way he did not waken anyone else in his household. If he had a dream during these two hours of sleep, he had a pad and pencil near him to write down what he could remember of his dream. He practised the long swing for five minutes or longer every night and morning in addition to other things. Every

morning he enjoyed the sun and practised palming and read fine print card. In a week's time the patient became quite all right.

2. A man fifty years of age began to wear glasses of +1.0 from the age of forty for near work. He had the habit of looking through these glasses at distance also when anybody came to see him and did not care to remove them while looking at distant objects. He knew that the distant objects were seen hazy through these glasses. Gradually the sight began to deteriorate both for distance and near. Few black thread-like spots appeared before his eyes and their appearance was annoying to him. At the age of forty-eight he had consulted a doctor who had prescribed glasses of +2 for distance and +3.5 for reading. Though it is a general belief that hypermetropia is congenital and the normal eye does not become hypermetropic especially in old age, many such cases are noticed during the course of practice and are usually ignored as they go against the orthodox theory of hypermetropia.

His vision in each eye was 10/40 without glasses and 10/20 with glasses. He could not read any letter of the Fundamental card without glasses. While he was reading the test type with his glasses, he looked at distant objects several times without removing his glasses. He kept his head lowered so that his chin almost touched his chest and then tried to look through the margin of the glasses. This produced a strain which the patient did not believe at first was the cause of hypermetropia.

This patient was quite intelligent and reasonable. He was enthusiastic to know what were his mistakes which caused eye strain and how he could make his sight worse by increasing the strain and how he could relieve the strain to improve his eyesight.

I taught him to raise the chin and blink frequently while looking at distant objects. I encouraged him to do the long swing, not paying attention to stationary objects in the room. Occasionally I had to remind him to keep his chin up like a soldier and blink gently at each side movement. His vision improved to 10/20 in less than half an hour's time. Having no sunshine on that day I asked him to face the strong electric light with the eyes closed.

Next day he brought his daughter twelve years of age. Her vision was tested and found to be normal. Her father said to her: "Can you tell that the largest letter on the test card is blacker than the very small letters." The child intelligently declared that the large letter was not blacker or clearer than the smaller letters. The father then asked his daughter how she explained that she could see the small letters better than large ones. She replied that the reason why she saw small letters better than large ones was that there was not so much to see.

The patient then realized that his central fixation was not so good as hers. It was difficult for him to imagine the top of a letter best and the bottom worst or to imagine the bottom best and the top worst. He invariably saw both at the same time nearly equally well, while the daughter always saw one part of a

letter at a time, the upper or lower, best. To improve his central fixation I placed two charts three feet apart at a distance of five feet from him. When he looked at the big C on the right-hand chart, the C on the left-hand chart was seen worse and the C regarded on the right-hand chart was seen blacker and clearer than the other C. Next I shortened the distance between the charts successively to two feet, one foot, and six inches, with a constant improvement in central fixation; and finally he became able to look at the bottom of the letter and see the top worse, or look at the top and see the bottom worse. With practice he became able to look at the smaller letters in the same way, and finally he became able to read the ten feet line at ten feet.

This day we had sunshine and while the patient resented the strong light of the sun at first as the sunglass was used on his closed eyelids, he soon became accustomed to it and liked it, asking for more.

To improve the near vision the patient was advised to practise on the fine print card, and in a week's time he became able to read the fine print in good light. Glasses of +1.5 made the reading quite comfortable in the dim light or in the artificial light. He practised palming for a few minutes now and then during the waking hours, and made it a routine to read the fine print with or without glasses

3. HYPERMETROPIC ASTIGMATISM

A man aged 57, who had astigmatism in both eyes, was afraid to leave off his glasses after the first treat-

ment. He had worn glasses for thirty-six years, having them changed several times during this period. At the age of 21, he paid his first visit to an oculist who told him that the compound hypermetropic astigmatism which he had would get worse if he did not wear his glasses steadily. He obeyed the oculist and in a year's time he had the glasses changed. The first few years he did not notice much discomfort while wearing the glasses, but later on if he did not remove the glasses occasionally and close his eyes to rest them, he would feel so tired that even at his work he would fall asleep.

He was examined by a good eye specialist who was recommended by his family physician, thinking that perhaps he might have had an attack of sleeping sickness. After chemical tests were made it was found that all the organs of the body were perfectly normal, and the doctor suggested that perhaps he might be wearing the wrong glasses. Then he became interested in the Bates method and came for treatment. I asked him to read the test card with his glasses on and he read 10/40. Without glasses he could not see anything on the test card clearly at ten feet, so I placed the cards at seven feet. At seven feet he could only read up to the 50 line letters of the test card.

He liked palming very much and kept his eyes closed for a considerable length of time while I was talking to his family physician, who came with the patient to see what could be done for him. I told my patient, while he was palming, that a good memory usually helped, but not to remember anything disagreeable while palming. He liked outdoor sports and was

a good golf player, so I told him to imagine the golf ball as he sent it across the field and to imagine that it went into the cup. After he had rested his eyes in this way it was amusing to hear him tell us that he had a good game of golf while his eyes were closed. Evidently this helped because his vision improved to 7/15, although all the letters on the 15 feet line were not entirely clear to him. When he strained to see some of the letters they became blurred and distorted and he read them incorrectly. After he had palmed his eyes again for a shorter period, he read all the letters of the 15 line clearly and without any hesitation whatever.

I gave him the Fundamental card to read and told him to hold it at the usual reading distance. He said all the print was blurred and he could not see anything but the word "Fundamentals" at the top of the card after he had closed his eyes for a few seconds. I told him to hold the Fundamental card in his left hand while in his right hand he held the small card with diamond type. I directed him to look first at the white spaces of the small card in his right hand and then turn his head and look at the Fundamental card and not to try to read the letters. While he was doing this I told him to draw the Fundamental card a little farther away, about twelve inches from his eyes. By alternately closing his eyes to rest them, imagining the white spaces between the lines of type, and then looking at the beginning of each sentence, he read down to sentence number 6.

I told him to look directly at the print and see what happened. He immediately closed his eyes and said that the print blurred and that it made him uncomfortable. For almost an hour he practised looking from the white spaces between the lines of fine print to the white spaces between the lines of larger print of the Fundamental card and before he left the office that day, he read all of the Fundamental card at six inches as well as at twelve inches. He telephoned a few days later and said that he felt no discomfort although he had discarded his glasses. There were times, however, when he did have a strong desire to put them on again. Advice by mail helped and in a year's time his vision became normal.

Having got rid of the fear about removing his glasses after having worn them so many years, he had proof enough that it could be done. It required will-power and also confidence in the instructor or doctor who was teaching the patient to see without glasses.

It is a mistake for patients to discuss the treatment until they are cured, because friends have a certain amount of influence in the matter, either for right or wrong. While some patients are cured quickly, there are patients who do not do so well and keep practising sometimes for a year or longer without obtaining a cure. This is because the method has not been carried out completely. Some patients need more supervision than others and for that reason it is best not to discuss the treatment with those who do not understand or who are sceptical about it.

CHAPTER XII

Discussion on Myopia

Myopia or short-sight is rarely acquired in old age. Myopic persons in old age may suffer from progressive myopia or various eye troubles, functional as well as organic. Such patients usually strain while looking at distant objects and in reading. Most of the old myopic patients whose sight is failing due to any cause, can be considerably benefited by relaxation methods aided by the medicinal treatment and glasses.

DISCUSSION: A doctor friend had heard much about the benefits of Dr. Bates' methods for the prevention and cure of errors of refraction, practised in my Institute. He came to see me with his son who was suffering from myopia. His vision of each eye was 10/30. Before I could start his son's treatment he wanted me to discuss with him about the causes of myopia. I said, "Well, I would like to know your views first about the causes of myopia." He explained that myopia is caused by the excessive use of the eyes for near work which gives strain on the eyes. Since the coats of the eye are softer in youth than in later years, the children are unable to withstand the increased tension in the eye produced by near work. Due to the increased tension the eyeball elongates and myopia is produced.

"It means in near work the lens becomes more convex hence the ciliary muscle is under excessive strain. Myopia cannot develop in adults because the coats of the eye are quite strong. Persons who do not use their eyes for near work do not suffer from myopia."

"Well, the following facts are worth considering," I said.

1. The excessive use of the eyes for near work first increases the convexity of the lens and then elongates the eyeball. Therefore, the change should be present in the shape of the lens when myopia is present but according to the supposed theory the eyeball elongates and not the lens in myopia.

2. When there is excessive strain on the eyes constantly, the child should feel the symptoms of strain which are absent in most of the cases who develop myopia.

3. Myopia frequently develops in adults and is observed in peasants who did not use the eyes for near work.

The doctor was puzzled with my arguments. I showed him the following remarks of some prominent ophthalmologists about the production of myopia :

"A satisfactory explanation of the mechanism by which near work produces myopia has not yet been given". — Tschering : *Physiological Optics*, p. 86.

"It is not yet determined how near work changes the longitudinal structure of the eye." — Eversbusch : *The Diseases of Children*, Vol. VII, p. 291.

The doctor's curiosity increased to know the truth about the cause of myopia. I explained to him that myopia is caused by efforts to see the distant objects, and not by the strain at near work. Looking at distant objects under strain increases the length of the eyeball, hence right focussing is disturbed. The elongation of the eyeball takes place by the action of the oblique muscles on the outside of the eyeball. These muscles immediately contract when there is strain in seeing distant objects and relax or function normally when the eye is free from strain. Dr. Bates' experiments about this theory are very convincing.

To demonstrate practically I called a boy patient into the darkroom. His complaint was headache while reading. I examined the eyes of this patient at a distance of six feet with the plane mirror of the retinoscope. The patient looked at the blank wall without strain, the retinoscope indicated that the eye was normal. Then I asked the boy to try to read the letters of the Snellen test card which was placed on the wall in front of him. The letters were faintly visible as the light was very dim. As the boy made an effort to read the letters, the movement of the shadow stopped. Then the boy looked at a point on his index fingernail at about ten inches distance in such a way that the pupil could be examined by the retinoscope. The shadow began to move in the same direction. Again

the boy looked at the blank wall without trying to see, the shadow moved in the same direction.

These facts were observed by the doctor also. No special skill was required to make this demonstration. I told him that Dr. Bates strongly recommended all physicians, teachers and others, interested in the welfare of the eyes of school children, to obtain a retinoscope and learn by practical demonstration that many school children and adults did not usually adjust their eyes accurately for distant vision. By doing this one obtained a grasp of the subject which would be of material benefit.

To demonstrate clinically that strain in near work does not cause myopia but improves the sight for distance I called the doctor's son and noted down his vision 10/30 without glasses. I gave him fine photographic reduction print to read as near to his eyes as easily possible. After a few minutes' reading the photographic type reduction at about four inches distance I instructed the boy to read the Snellen test card again. His eyesight had temporarily improved, and the vision 10/20 was recorded, and the chart letters appeared clearer than before.

The doctor friend understood that straining the eyes to see at long distances produced myopia, while by making an effort to see at the near point continuously, the eyes become farsighted. Now he wanted me to begin the treatment of his son. I educated his son how to blink rightly and directed him how to focus correctly on the Snellen test card at three feet distance by the help of central fixation exercises.

I explained to the boy that when he looked at the bottom of the letter 'C' the whole letter was visible but the bottom appeared more distinct than the top of 'C', and when he looked to the left part of the letter, the left part appeared more distinct than the rest of the 'C'. When he shifted his sight from the bottom to the top and from the top to the bottom of the letter, the part of the letter on which he focused appeared more distinct and blacker than the part of the letter on which he did not focus his sight. In this way he practised on smaller letters also. At times he found it difficult to note the part regarded more distinct, but after closing the eyes for about a minute and remembering the black or white colour he was able to note the clearness in the part of the letter regarded. The chart was gradually shifted to ten feet. Sometimes the boy outlined the letters while his eyes were closed and then occasionally looked at the card letters. The boy improved his sight to 10/15 in an hour's time. As this improvement was temporary I advised the doctor to help his son in the way I had helped him.

STORIES FROM THE CLINIC

1. A man of 40 with progressive myopia attended the clinic and questioned whether I could give him a promise of quick cure as I had done in certain other cases. Further he remarked that he would pay me any amount I liked.

We must use the word "Cure" with great care. What a patient means by cure does not remain the



*His Excellency Sir Mohan Shumshere Jung Bahadur
Rana, the Commander-in-Chief of Nepal
"My heartfelt gratitude is due to Dr. Agarwal
who came to me as a messenger of hope and has
brought me such an unexpected relief."*

HIS EXCELLENCY SIR ANDREW
CLOW

"I have been much impressed both by the soundness of Dr. Agarwal's treatment and by his disinterested philanthropic work. I wish him all success in the new venture he is starting....."

THE HON'BLE SIR GIRJA
SHANKAR BAJPAI

"Dr. Agarwal's methods appear to be based on ancient, if forgotten, Indian practice..... I wish him every success in a work which is not only philanthropic but may prove to be a valuable contribution to Ophthalmic Science."

same as when he begins the treatment ; with the progressive improvement in his condition he wants a cure more complete, more thorough and more lasting than what he had expected in the beginning. To promise any patient a cure is unwise from a scientific standpoint. Many times a patient does not co-operate with the doctor, or even if he understands the right way of practice he does the wrong. Some patients fail to practise perfectly though they try their best.

Quick cures have their disadvantages also. A patient feels that since his benefit came easily, with his good sight now he can go off at any time he likes and have a spree, in which he stares and strains and uses his eyes to his heart's content without any fear of a relapse. One should impress such cases that to make the improvement lasting it requires a long training to use the eyes in the right way. Patients who learn about cases of quick cure expect themselves to be cured in the same way as quickly and as permanently. If they are not, they are disappointed, they have a way of expressing that disappointment which is not very pleasant. It is well to have in mind that most of the quick cures happen when least expected and we do not always know what particular thing accomplished it. In my work I do not guarantee a cure but usually give hope of some benefit.

Then the patient asked : " What kind of cases are quickly cured ? " We have not sufficient facts to answer this question, because mild cases of imperfect sight may require a long time while cases of high

myopia or hypermetropia, practising the same method of treatment, are cured quickly and we cannot give any reason for it.

This patient showed a little improvement in a week's time though he had great hopes. He continued his practices with slow and steady improvement, and after six months he showed considerable improvement in his eyesight but did not get the quick cure as he had wanted. He was prescribed glasses of lower power for distance only.

2. A case of organic myopia had very poor vision even with glasses both for distance and for near point. He had retino-choroiditis and posterior staphyloma. He complained of night blindness, floating specks and headache. He was frequently changing his glasses and had taken a course of injections to prevent rapid deterioration in his eyesight. I told the patient that the power of his glasses would not be reduced but his vision would show considerable improvement without and with glasses. Sun treatment, frequent palming and swinging proved very helpful in his case. In a month's time he could read the fine print without glasses at six inches but with glasses he could read fine print at 9 and 12 inches. His distant vision improved from 10/70 to 10/20 with glasses. The headache disappeared completely, but the floating specks appeared occasionally. Night blindness decreased.

3. A lady patient was using glasses of -2.5 and was eager to discard them as the constant use of spectacles caused dullness in her eyes and disfigured

her face. I asked her to discard her glasses for about a month and practise the relaxation methods.

For a few days she practised blinking, palming and swinging but she did not show sufficient improvement. The memory or imagination of the small colon (:) at one part best, can usually be practised with benefit. So I directed her to remember the two dots of a colon with the eyes closed. When she remembered the top dot, the bottom dot blurred; and when she remembered the bottom dot, the top one blurred. While shifting the imagination from one dot to another, she noted the short swing of the colon. When she made an effort to remember the colon or tried to stop the swing of the colon, the mental picture of the colon disappeared. Hence to keep up the mental picture of the colon perfectly, she shifted from one dot to the other constantly without effort or strain. It was interesting to note that she felt difficulty in remembering a large colon and it was easy for her to remember a small one. The smaller the colon she remembered, the blacker and better she had the mental picture of the colon with benefit to the sight.

When the imagination of the small colon became perfect with the eyes closed, she practised the imagination of the colon with the eyes open while looking at the blank wall. By alternately imagining the colon with the eyes closed and open, she became able to keep up the mental picture of the colon with the eyes open for long periods. The Snellen eye-testing chart was then placed on the wall and she remembered the colon

while keeping the sight on the wall by the side of the chart. Gradually she remembered the colon while glancing at the white centres of the letters or while keeping the sight just by the side of the letter. The memory of the colon improved her sight to 20/30 permanently and to 20/20 occasionally in two weeks' time. Whenever she made an effort to see the letter, the mental picture of the colon was lost and sight became worse.

After two weeks she wanted to see the cinema. I advised her to go to the same cinema picture for three days at least. She should sit in the middle of the hall on the first day, then go back on the second day, and still farther back on the third day. The memory of the first day helped her to see the picture clearly from farther seats on subsequent days. While seeing the picture she kept up her blinking and remembered the colon at times. During the interval she palmed and remembered the episode.

After one month she did not feel the necessity of glasses at all. The expression of the eyes and face became attractive and natural. One day her family doctor told her that she should use her glasses, otherwise she might get strain and spoil her eyes. She said to the doctor, "What are the symptoms of eye strain, which I may have if I do not use my spectacles?" The doctor replied, "The symptoms of eye strain are dimness in the vision, pain, tiredness, dullness or heaviness in the eyes, headache etc." She then said, "These symptoms were present when I was constantly using glasses, but now I am free from these symptoms

of strain. I feel my eyes healthier and much better than before. Then, why should I use glasses and make them worse?" The doctor kept quiet.

She was fond of tennis. I told her that all such games were useful to the eyes. While playing she kept the memory of a small black dot, and this enabled her to play efficiently.

CHAPTER XIII

Floating Specks (*Muscae Volitantes*)

Many persons suffering from imperfect sight especially myopia complain of specks floating before the eyes; these are called in medical terms "*muscae volitantes*" or "flying flies". They are usually dark or black but can be of any other colour also, and sometimes they appear like white bubbles. They move somewhat rapidly, usually in curved lines, before the eyes, and always appear to be just beyond the point of fixation of sight. If one tries to look at them directly, they seem to move a little farther away; hence their name is "flying flies". They may have any shape. They are annoying, and sometimes alarm the patient.

Usually floating specks appear at one time and disappear at another time, but they are often present while one looks towards a uniform white surface. Sometimes they appear when the eyes are closed. Even in extreme cases there are periods, short or long, when they are not seen with the eyes open.

The literature on the subject is full of speculations as to the origin of floating specks. Floating specks are supposed to be due to the presence of moving, floating opacities in the vitreous. They have been attributed to disturbances of the circulation, the digestion and the kidneys and are also supposed to be an evidence of incipient insanity.

IMPORTANT POINTS—As regards the view that the floating specks are due to the presence of floating vitreous errors of refraction and physical disturbances the following points are worth considering:

1. Though floating specks are present usually in high myopia, they are absent in many high myopic cases. On the other hand they may appear before the eyes of persons of fairly good vision or in cases of small errors of refraction. Hence an error of refraction is not the cause.

2. They may be present in some cases suffering from disturbances of circulation, digestion and the kidneys, but they are absent also in most cases suffering from such disturbances even in aggravated state. Further, they are also present in persons who have no such disturbance and are quite healthy. These facts do not tally with the idea that the floating specks are due to disturbances in the system.

3. If the floating specks are due to floating vitreous opacities, then we can safely say that the trouble is an organic one and that the floating specks ought to be seen with the aid of an ophthalmoscope or retinoscope, and that the patient should be able to see them before the eyes when they are open. They should not be seen when the eyes are closed because the retina is sensitive only to light and floating specks can be seen only when the retina is functioning.

On examination with an ophthalmoscope or retinoscope, these floating opacities are not found and the vitreous is usually found to be quite clear. Moores

Ball writes in his *Modern Ophthalmology*. "Muscae volitantes show no opacities to the ophthalmoscope. They are exceedingly annoying, and often remain in spite of the correction of refraction errors and attention to the general health." Moreover, the patient may see them with the eyes closed or in darkness, and may not see them at times when the eyes are open. These facts do not harmonise with the theory that the floating specks are due to the presence of floating vitreous opacities.

4. Suppose there is an opacity in the vitreous of one eye and the other eye is all right. The vitreous opacity will not be seen as a floating speck because the mind has the faculty of fusing the images of both the eyes. Even if the good eye is covered, the vitreous opacity will not be seen as a speck unless it is quite big, dense and in the centre of vision because the mind has the natural tendency to ignore to see the opacities in the form of speck or specks, just as when there is an opacity on the cornea or on the lens or when the retina has a blind spot, the mind does not perceive a speck before the eye as a result of the opacity or the blind spot. It is why many patients suffering from incipient cataract, keratitis punctata, and central opacity cornea do not complain of speck or specks before the eye though the vision may be defective due to such organic changes. I herewith quote two cases of vitreous opacities, who did not complain of specks before the eyes.

In 1894 A. H. Banson of Dublin, reported the case of a man, aged 62 years, with normal vision, whose right vitreous humour "was studded everywhere with small, smooth, fixed

spheres of a light cream colour." (Transactions of the Ophthalmological Society of the United Kingdom, Vol. XIV 1894, p. 101.)

Regarding the presence of an animal parasite, cysticercus, in the vitreous, Moores Ball writes, "In many instances the patient complains only of loss of vision." (Modern Ophthalmology)

THEN, WHAT CAN BE THE CAUSE? The truth about the floating specks is that they are the result of a strain of the mind, and when the mind is disturbed for any reason, floating specks are likely to occur. This strain is different from that which causes errors of refraction. In all cases of floating specks it will be found that the central fixation is lost partially or completely. By central fixation I mean that the letter or part of the letter regarded is seen best. For example, there is a small letter E on the Snellen test card; when the top arm of E is regarded at ten feet or more, it is seen more distinct than the bottom arm of E, and when the bottom arm is regarded, it is seen clearer than the top arm.

As a matter of fact the specks are never seen except when the eyes and mind are under a strain, and they always disappear when the strain is relieved. If one can see a small letter on the Snellen test card at ten feet or more with central fixation and then remember it mentally by central fixation, the specks will immediately disappear or cease to move; but if one tries to remember two or more letters equally well at one time, they will reappear and move. The trouble of floating specks is wholly functional and not an organic one.

Persons who have fairly good vision and see floating specks also suffer from strain. They do not possess good vision all the time. Their central fixation is frequently disturbed by seeing unfamiliar objects, wrong use of the eyes, worries, physical discomforts, lack of good sleep etc. Floating specks may be present before one eye and not before the other, because there are two separate eyes, each functioning separately, one may strain and the other not. All relaxation methods are helpful in relieving the strain.

Patients who usually see floating specks while looking at a white wall or white clouds suffer from strain. Most people who did not see floating specks before, can see floating specks when they look at the sun, or any uniformly bright surface, like a sheet of white paper upon which the sun is shining. This is because most people strain when they look at surfaces of this kind.

The floating specks are present in cases of disturbances of digestion, heart and kidneys because these diseases cause strain on the mind and if the eyes and mind strain in such a way as to cause the presence of floating specks they will appear, otherwise not.

Patients who are benefited by correction of errors of refraction or by the treatment of the general system are those in whom the strain which makes one see floating specks is somehow relieved along with the correction of errors of refraction or the treatment of of the general system.

Why is a patient suffering from floating specks declared to be suffering from vitreous opacities? There are several possibilities :

1. If the opacity is actually present in the vitreous, it will not be seen as a speck unless the opacity is dense and big enough in front of the central vision. The patient in whom there is the presence of the vitreous opacity usually suffers from floating specks as well. It is a mistake to conclude from this that floating specks are due to the vitreous opacity.

2. Opacities in the vitreous may not be found but the doctor explains to the patient that the floating specks are due to the presence of vitreous opacities. It is only for the satisfaction of the patient.

3. Declaration of the presence of vitreous opacity may be due to the fact of the doctor himself suffering from this trouble and hence he sees it in the patient's eye or his mind is already hypnotised by the opinion of great authorities.

TREATMENT : Usually the strain that causes floating specks is easily relieved. Most cases suffering from floating specks have been benefited by the relief of strain with the aid of central fixation exercises as devised by Dr. W. H. Bates, M. D., of America. Some cases were cured in a very short time, a day or week, while others took longer time. Seldom there were cases who took very long time, a year or more, for the partial or complete cure.

In the treatment of floating specks it is very important at first to convince the patient that the trouble of floating specks is merely functional and that there is nothing wrong organically in the eye. The patient is warned not to try with his eyes whether he can see floating specks and is advised to ignore their presence altogether, putting no importance on their presence. Correction of errors of refraction with or without glasses and treatment of physical discomforts help in relieving the strain.

STORIES FROM THE CLINIC :

1. A patient who was a member of the Viceroy's executive council, complained of floating specks before the right eye, especially when he felt tired in the office. He consulted three eminent eye specialists; one of them did not find anything wrong in the eye while the others said that the floating specks were due to the presence of vitreous opacities. He was thoroughly examined and nothing abnormal was found by the examination of urine and blood.

I examined his eyes with the ophthalmoscope and under a strong magnifying glass but I could find no opacities in the vitreous. The patient was suffering from high myopia and using two pairs of glasses, one for distance and the other for reading. I told the patient that there was nothing wrong with his eye. He did not believe me as he was actually seeing floating specks, and because his mind had already been impressed by the opinion of doctors of great reputation. So in order to convince him about my opinion I had to argue with him thus :

"What is the nature of vitreous? Is it not a jelly-like substance."

"Yes."

"Could a thing, however small, float in a jelly-like substance?"

"No."

"You say floating specks are present especially when you feel tired and only before the right eye. I think they are not present in the mornings when the mind is fresh or when you do not attend the office." I added.

"Yes, that is right."

"If the opacities are present in the vitreous, they ought to be present all the time when the eyes are open, and should not disappear when the mind is at rest under certain conditions. Therefore, your trouble is purely functional and can be relieved temporarily in a few minutes by central fixation exercises."

I gave him a book and asked him if he could regard the first word of a sentence more distinctly than the other words. When he regarded the first word with his right eye the word was seen worse than the other words. When the word was regarded with the left eye it was seen as well as other words.

I told him to close his eyes and remember black or white colour any of which he could easily remember. He could remember coal-tar colour and felt his eyes and mind relaxed. Then he opened his left eye and looked at the first word for a fraction of a second and

noted the word regarded blacker than the others. He then opened the right eye for a fraction of a second but could not note more blackness in the first word. So he closed the eye soon and by frequent repetition he became able to see the word regarded blacker and more distinct than the other words, with each eye separately.

He then practised central fixation on the letters of Snellen test card, and shifted his sight from bottom to top and top to bottom of every letter and noted the part of the letter regarded blacker than the opposite part. In this way he practised even on the smallest letters with each eye.

Then he stood before a window and began to swing a little from side to side gently. He did not care to see anything but merely shifted his sight on the background without any effort to see. He could easily note that the bars of the window appeared to move in a direction opposite to his body movement. At times he closed his eyes and visualised mentally that the window bars were moving in the opposite direction. The patient enjoyed the sun treatment and palming. Gentle blinking was performed when the eyes were open.

By half an hour's practice the floating specks disappeared altogether.

2. Dr. Bates mentions a very interesting case of floating specks in his book. The patient was a physician who had been seen by many nerve and eye specialists before he came to Dr. Bates. He consulted

him at last, not because he had any faith in his methods but because it seemed to him that nothing else was left to be done. He had worn glasses prescribed by different doctors without benefit and frequently suffered from headache. Floating specks caused great uneasiness in his surgery work. His treatment proved to be very difficult as his logic was wonderful, apparently unanswerable and yet utterly wrong. His loss of central fixation was of such a high degree that when he looked at a point forty-five degrees to one side of the big C on the Snellen test card he saw the letter just as black as when he directly looked at it. He could not be convinced that this was an abnormal symptom. If he saw the letter, he argued, he must see it as black as it really is, because he was not colour-blind. Finally after some treatment by Dr. Bates, he became able to look away from one of the smaller letters on the Snellen test card and see it worse than when he looked directly at it. When he attained central fixation on the small letters he experienced a wonderful feeling of rest and floating specks disappeared. Frequently he looked at a blank wall and remembered mentally a small black dot. After some days' practice his sight became normal, and he obtained complete relief from the floating specks and the headache.

3. An old lady patient was suffering from symptoms of glaucoma. Her vision was 6/60 without glasses and 6/6 with glasses of +3. She could read bold type about half an inch size at ten inches. She was seeing floating specks which she could multiply and could see them just as clearly with her eyes closed as

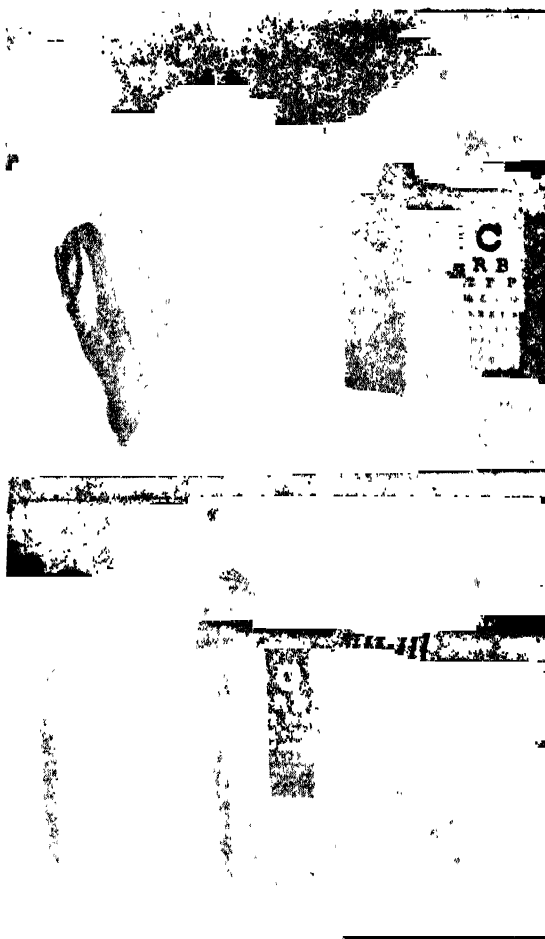
she could with the eyes open. She was suffering from digestive troubles for a long time. When I asked her if she could see the letter regarded on the Snellen test card more distinct than the other letters of the line of the test card, she said, "I see the other letters, not directly regarded, more distinct than the letter on which I fix my sight." I put this patient under relaxation exercises to improve central fixation. In a week's time floating specks and symptoms of glaucoma completely disappeared. In a month's time the vision was considerably improved.

4. A doctor friend can see consciously at will, any time he desires, floating specks of different colours on looking into the open broad daylight. He notices the strain in the eyes when he is seeing these floating specks. On taking the sight away from the floating specks, paying no attention to them and giving the eyes some rest and relaxation, they are no longer seen.

LONG SWING



The patient, a case of detachment of retina, is practising long swing before the window bars.



A case of retina - choroiditis was considerably benefited by relaxation methods. He is practising on the chart.

CHAPTER XIV

Glaucoma

Glaucoma is a serious disease of the eye. In most cases, the eye-ball is usually too hard and this is the sign which more than any other is the strongest evidence we have that the eye is suffering from glaucoma. The field of vision is contracted on the nasal side and the pupil is usually more or less dilated ; the cornea is not as sensitive as the normal eye. Sometimes the anæsthesia, or that condition in which the cornea is not sensitive to the touch of a blunt pointed instrument, is quite marked. One characteristic symptom is the apparent appearance of colours around the flame of a candle or some other similar light.

Glaucoma is a disease of adult life and seldom occurs in children. Its uncertainty is unusual. For example, a person with normal eyes and normal sight may retire feeling perfectly comfortable. Sometime in the middle of the night, he may be awakened by a very intense pain, with total permanent blindness in both eyes from glaucoma. In a limited number of cases, pain may be absent, although the vision may be partially lowered. The sudden onset may not occur, but one or both eyes may slowly, without pain, after a long time, a year or longer, become totally blind.

In the American Encyclopedia of Ophthalmology, the article on glaucoma consists of 170 pages of solid

type, describing facts connected with the symptoms, cause and treatment of glaucoma. These facts are so numerous that the present writer does not have to repeat them himself here. He emphasizes, therefore, how little ophthalmologists actually know about glaucoma. It is evident that all the theories cannot be true.

One authority claimed that the cause of glaucoma was connected with the loss of the iris angle (that part of the eye which is located at the outer part of the iris), when a formation of new tissue, resembling scar tissue, formed in the iris angle and acted as a sort of plug preventing the proper circulation of fluids of the eye-ball, when there was less fluid in the front part of the eye-ball than is found in the front part of the normal eye. Many cases were benefited by iridectomy, an operation in which a portion of the iris is removed. This theory went the way of some of the others when numerous exceptions were observed.

Another authority claimed that dilatation of the pupil was an important factor in the cause of glaucoma. However, many cases were found in which the pupil was contracted as much as, and in many cases more than, in the normal eye.

The results of the various methods of treatment which were suggested and practised have been so disappointing, that we hesitate to foretell what may happen after any of them has been practised. Dr. Bates has observed some important facts which can be very well understood if we have the comparative study of the normal eye with that of the glaucomatous eye.

1. The normal eye regards a letter or an object without any effort like other sensory organs, while the glaucomatous eye makes an effort to see the object. This effort indicates staring and is evident from the expression of the eyes and face in most of the cases.

2. To the normal eye the part of a letter or the letter regarded appears best due to acute sensitiveness of macula lutea. To the glaucomatous eye the letter regarded appears to be of the same shade or even worse than the other letters seen from the field of vision. This is because the patient tries to see many letters at a time, suppresses the sensitiveness of macula lutea and increases the activity of other parts of the retina.

3. When the normal eye looks from one side of a letter to another, not only the letter but the whole line of letters and the whole card appears to move from side to side. This apparent movement is due to the shifting of the eye without any effort to see the letter, and this movement is always in a direction contrary to its movement

When the glaucomatous eye shifts sight from side to side of a letter on the test card, the apparent movement of the letter or of the line of letters and that of the test card is retarded or absent or opposite to that of the normal eye. This is because the patient shifts the sight while staring at the letter.

4. The normal eye shifts rapidly from point to point of a letter and does not fix on a point longer than a fraction of a second. If it tries to do so, it begins to

strain and the vision is lowered. This can readily be demonstrated by trying to hold one part of a letter for an appreciable length of time.

The movement or the shifting of the eye with normal vision is usually not conspicuous, but by direct examination with the ophthalmoscope, it can always be demonstrated. If one eye is examined with this instrument while the other is regarding a small area straight ahead, the eye which is being examined, and which follows the movements of the other, is seen to move in various directions, from side to side, up and down. These movements are extremely rapid and unaccompanied by any appearance of an effort. The glaucomatous eye is seen more or less stationary. The movement is jerky and wider and made with apparent effort.

5. The normal eye can increase its tension voluntarily.

Put the fingers on the upper part of the eye-ball while looking downwards, and note its softness. Then do any of the following things:

(a) Try to see a letter or other object imperfectly or try to imagine it imperfectly.

(b) Try to see a letter or a number of letters, all alike at one time or to imagine them in this way.

(c) Try to imagine that a letter or mental picture of a letter is stationary.

(d) Try to see a letter or other object double or to imagine it double.

When successful, the eye-ball becomes harder in proportion to the degree of strain, but as it is very difficult to see, imagine or remember things imperfectly, all may not be able at first to demonstrate the facts.

6. Production of eye tension is due to two important changes.

(a) Spasm of External Eye Muscles — Spasm of the muscles causes increased tension, retards the rhythmic movements of the eye-ball, and makes the eye-ball more or less stationary. The following experiment on the muscles was performed by Dr. W. H. Bates, M. D., New York. "Shortening the Superior Rectus by tucking; thereby a tension of + 1 was produced. The operation upon the Superior Oblique increased the tension to + 2. Operation on the Inferior Oblique increased the tension to a maximum + 3. All this time the tension of the other eye-ball remained normal."

(b) Stimulation of the Ciliary Body — Ciliary body supplied more fluid to the inside of the eye-ball than normal, hence the tension of the eye-ball was increased.

7. Why is the field of vision contracted? This is because the patient tries to see from the peripheral part of the retina, and an effort to see makes that area dull and insensitive.

TREATMENT

If the eye having the symptoms of glaucoma can be educated to imitate consciously the working of the normal eye, it will be benefited. The eye exercises

as devised by Dr. Bates help very much in the prevention of glaucoma and cure this disease partially or completely. Use of medicines and nasal drops hasten the improvement in some cases. Operations may be performed in selected cases. Homeopathic drugs have been found useful in certain cases.

A CASE OF HYPERMETROPIA AND GLAUCOMA

An English lady aged 61 came to the clinic with her physician. The surgeons of her town were of opinion that she had an incipient cataract in her eyes though they had not examined her with the ophthalmoscope. When the patient entered the consulting room I noted that her whole body seemed to be tense, the eyes widely open having a staring look, the forehead full of wrinkles, the whole feature of the face and eyes indicated as she was under a great mental strain. Before I put any question to her about her eyes I asked her to keep her eyes closed. I had a good conversation with her and she related her good days in England with her friends. A few minutes' pleasant talk produced a sense of relaxation in her nerves. I then wanted to know something about her eyes.

She had good distant vision till the age of 55 and she was using lenses of plus three spherical for reading. She was an avid reader, and read late in the night in spite of the strain that she often felt in reading. For about one and a half year she was noticing a gradual deterioration in her sight for distance and near and the glasses did not help her in reading. Everything appeared foggy. She complained of pain in the back of

the eye-balls, heaviness in the head, throbbing sensation in the temples, halo around light. Occasionally the pain aggravated in sleep and made her very uncomfortable. She was afraid of blindness as two of her aunts had suffered from similar pain and dimness in vision and had lost their sight in spite of medical aid. "Probably they suffered from glaucoma", she said. She was seeing floating specks which she could multiply and could see them just as clearly with her eyes closed as she could with open eyes. Field of vision was almost normal. Eye-balls seemed to be harder than normal to the fingers. Tension with the tonometer could not be taken as she refused the use of any instrument in her eyes. Pupils reacted to light.

The vision on the Snellen test card was 6/60 in each eye but she could read 6/6 with plus three spherical. Near vision was very poor. She could read letters of half an inch size on Snellen reading type No. 5 at nine to twelve inches without glasses but with plus five spherical she could read diamond type or Snellen type No. 1. Though she could read all right with glasses, yet the letters seemed to be covered with a thin mist.

To determine the sensitiveness of macula lutea I placed the Snellen test card at three feet distance from her eyes and asked her if the letter regarded appeared more distinct than the other letters of the line. She said, "I see the other letters, not directly regarded, more distinct than the letter on which I fix my sight." This indicated that the macula lutea of each eye had become less sensitive and the area of the retina away from the macula lutea was more sensitive than the

macula lutea. Loss of sensitiveness of macula lutea is the sign of great strain and is found more or less in all cases of hypermetropia and glaucoma. When the eyes are normal the letter or part of the letter regarded appears best, and it means that the macula lutea is very sensitive.

In the dark-room examination the ophthalmoscope revealed a small cupping in the optic disc of both the eyes. Usually so much cupping is not present in the normal eyes but it is difficult to say that it was glaucomatous cupping as some normal eyes also have so deep a cupping. The ophthalmoscope revealed one thing important. When I was examining the right eye I asked the patient to look at the distance with the left eye. The disc seemed to be stationary or made big jerks at long intervals. The left eye disc also showed similar movements. This indicated that the eye-balls were more or less stationary. In the normal eyes the disc appears to make short and rapid movements. The movements of the disc indicate that the eye-ball makes short and rapid movements which are not conspicuous. The blood vessels were quite clear and no sign of cataract appeared even under a high magnifying lens.

I explained to the patient's physician the following facts :—

1. The patient has acquired hypermetropia in old age.
2. As a result of hypermetropia and mental strain premonitory symptoms of glaucoma seem to be developing.

3. The eye-balls have become more or less stationary as a result of the spasm in the external eye muscles.

4. The macula lutea has lost its maximum sensibility, hence the objects appear to be covered with mist.

5. The eyes, the mind and the nerves of the whole body are under a great strain.

6. There is no sign of cataract.

7. The treatment which will benefit hypermetropia will yield good and quick results and remove the symptoms of glaucoma and improve the eyesight.

The fact that his patient had acquired hypermetropia in old age was a great surprise to the physician as he had read that hypermetropia was a congenital condition and formation of the eye-ball could not be altered and that the lens could not be the cause of so much hypermetropia as it lost its elasticity in old age. He wanted an explanation. I told him that probably every ophthalmologist came across such cases in whom there was an increase of hypermetropia in old age. These cases do not tally with the theory of accommodation or rather they prove to be a stumbling-block, hence they are ignored or some plausible explanation is given. According to Dr. Bates' theory accommodation is controlled by the external eye muscles and hypermetropia can be acquired by the contraction of the recti muscles at any age. His theory has not been accepted by the medical science as yet though Dr. Bates' experiments are very convincing. However, I did not want to enter into a discussion on this topic.

The cause of hypermetropia or contraction of the recti muscles was a strain or an effort to see in near work. To prove practically I called a boy patient in the darkroom. This patient had myopia of half a degree. The patient looked at a distance and the retinoscope with the plane mirror indicated that the shadow was more or less stationary. Then I asked the boy to look at a point placed on his nail of the forefinger at about three inches distance. He held the finger in such a way that the eye could be examined by the retinoscope at six feet distance. He made a strenuous effort to see the point but was not successful. The retinoscope indicated that the shadow was moving in the same direction. The doctor himself examined this fact and realized how strain in reading could create hypermetropia. He understood that his patient had gained the habit of making an effort to see letters and had forgotten that the normal function of the eyes was effortless like other sense organs. This caused strain and produced spasm in the muscles and hypermetropia. Now the doctor anxiously waited how I could benefit hypermetropia and relieve the symptoms of glaucoma.

The lady patient believed that in old age everyone lost his eyesight hence it was difficult to improve her sight. I said to her, "Well, the eye is one of the sensory organs and it functions without any effort like the ears or nose. Do the ears become defective in old age except in rare cases? If not, why should the eye? The strain or an effort to see is the cause of defective sight and the resting of the eyes and mind is the right treatment." This argument appealed to her and she

showed right spirit of taking the treatment. I chalked out the treatment keeping two considerations—(1) to improve the general health of the eye, (2) to relieve the strain by some relaxation methods. Everyone can experience that when the legs are stationary in standing, a sort of strain and discomfort is felt, but so long as the legs make rhythmic and gentle movements, there is no feeling of strain. It means rhythmic and gentle movements relieve the strain. The normal eye is at rest when it is gently moving to prevent a stare or a strain. If the normal eye stares at a letter the eye becomes more or less stationary and a strain is felt. So to create rhythmic movements in the eye-balls I asked the patient to stand with the legs about one foot apart and turn the body to the right—at the same time lifting the heel of the left foot. The head and eyes moved with the body. She felt that the front objects appeared to move in the opposite direction, but she paid no attention to the apparent movement of the stationary objects. After 5 minutes' practice she felt relief in the pain of the eye-balls and heaviness in the head.

I then put her in the sun which was not hot at that time. She faced the sun with the eyes closed and gently moved her head and body from side to side in order to avoid discomfort from the heat. Then I focused the light with the aid of the sun-glass on the closed eyelids, which at first was disagreeable. While using the sun-glass I moved it rapidly from side to side so that concentrated rays might not cause a burning sensation. She enjoyed the sun for about ten minutes.

After sun treatment she came to the shade, sat comfortably, closed the eyes and covered them with the palms of the hands, avoiding any pressure on the eye-balls. A cushion was tucked below her elbows. While closing the eyes in this way she imagined flowers, plants, green grass fields etc. Imagination of green colour was very soothing to her. As her memory for such objects was very good, she felt as if it was all dark before her eyes.

For one week this sort of treatment continued three or four times a day. Feeling of pain, throbbing sensation, floating specks, heaviness in the head had completely disappeared but there was no appreciable change in the vision. I added then the practice on the Snellen test card having white letters and a black background as the Snellen test card with black letters and a white background caused a strain to her eyes. She moved her sight from side to side of the letters and noted that the letter appeared to move in the opposite direction. First she practised at three feet and then gradually increased the distance to fifteen feet. The improvement in vision began to come slowly. In the midst of the practice some modifications were frequently made so that one type of practice might not become cumbersome to her.

To improve the reading sight I took the help of a white line. The white space in between the lines of print is called the white line. If one can imagine a thin white line in this white space below the letters of the test type, it is very helpful. This thin white line

is only imagined, it is not seen, because the line is not really there. It is valuable in the treatment of hypermetropia and astigmatism.

The patient could not imagine the white line, so she was told to close her eyes and think of a series of white objects as a white cloth, white clouds, white paint. She then opened her eyes and looked at the white spaces, imagining them to be as white as white paint. As she shifted her sight from one end of the white line to the other she blinked, and at times closed the eyes for half a minute to improve the imagination of white. By practising in this way she made no effort to see the letters, but the letters which could not be seen before appeared black and distinct. At times she tried to imagine the white line and at the same time tried to see the black letters; and as this was the wrong way, she felt strain and the blackness of the letters faded.

The result of this treatment after one month was that she became able to read Snellen reading type No. 2 at ten inches without glasses. Her distant vision improved from 6/60 to 6/9. The mist completely disappeared and her feeling was as if she had a new pair of eyes. Her whole body became alert and relaxed and she appeared quite cheerful. To prevent any relapse I advised her to read the fine print daily by shifting the sight in between the lines of print and blink frequently. She often studied the book 'Mind and Vision' to know the details of relaxation methods.

2. A patient was suffering from a mild form of glaucoma. He was much afraid of this disease as

it had spoiled the eyes of his uncle and of a friend. He did not like any sort of operations as they proved altogether useless in the eyes of his uncle.

His eye-balls were hard and the field of vision was contracted on the nasal side. A large letter on the Snellen test card appeared brown at fifteen feet distance. The letters of the chart appeared to be single, double or more numerous. Sometimes the letters of one line would be apparently above the other. Sometimes the double images appeared to be slanting. One of the peculiarities of this case was that he was able to see the small letters of the chart more clearly than the large letters. The letter regarded was not so black as other letters in the field of vision not directly regarded. When he regarded the Snellen test card at six feet, his vision became worse. In dim light his vision became very poor. At ten feet, in ordinary day-light, his vision became normal at times. At twelve inches he could read the fine print with difficulty, but at the same distance he was unable to read print which was four times as large as fine print.

Such cases are rare. It was difficult to explain or to find out why it was that there were periods of time when the vision at six feet distance was poor and why the vision at ten feet or more was good. Another important fact was that the patient himself could improve his vision for any distance desired by some activity of his mind which was neither a strain nor a relaxation.

It is very important to know the relation between mental activity and sight. Because imperfect is not possible without a mental strain. The mind of a sight patient with imperfect sight will imagine things wrong, although the patient may not be conscious of this fact. If the patient knows what is wrong with his eyes, the knowledge is a great help in effecting a cure.

There are many ways of securing relaxation, but this patient was greatly helped by memory swing. With the eyes closed he imagined himself to be looking first over the right shoulder and then over the left shoulder, while the head was moved from side to side. His eye-balls could be seen through the closed eyelids to be moving from side to side in the same direction as the head was moved. Gradually he shortened the memory swing by remembering the swing, first of a large letter, then of a small letter. He shifted his imagination from right to left and left to right of the letter, and the letter appeared to move in the opposite direction.

By practising the memory swing and palming several times a day the strain and tension were relieved and the eyesight was improved. The patient became convinced that he was suffering from a mental trouble as well as an eye trouble, and this knowledge led him to practise relaxation methods more faithfully to have complete recovery. Central fixation exercise and reading fine print and photo print with the imagination of thin white line cured him in a very short time. To get over the difficulty in reading I had asked

him to read fine print with the aid of a small black card having a slot in it. He took a stout black card about the size of a small postcard, a ruler and a knife. Across the centre of this card he cut a slot slightly longer than the average line of print and wide enough to take in about two lines. Then he put this card on the print in such a way that the line to be read was seen through the slot. He moved the card downwards after reading each line. This simple process helped him to develop central fixation and imagination of white line.

3. A patient was suffering from absolute glaucoma. He could not perceive even bright light and the pupils were widely dilated and did not react to light. The eye-balls were hard like stone. The patient told me that six years back he had complained to a doctor about the dimness in his vision and the doctor had diagnosed it to be cataract in an early stage and advised him to wait for operation till the cataract was matured, that is, when he would not be able to see anything. For one year his vision was lost totally. He consulted the same doctor a few months back and then the doctor said that it was glaucoma and gave no hope even by operation. My advice to this patient was also the same—hopeless condition.

All such cases can be greatly benefited in an early stage. It is true that they are commonly mistaken for cataract in an early stage, but relaxation treatment can be safely prescribed to save them from blindness.

CHAPTER XV

Cataract

In cataract, the pupil instead of being dark becomes of light gray or some other colour, due to the opacity of the focussing lens of the eye, which is just behind the coloured part of the eye, the iris. Rays of light which enter the eye pass through this lens and are focussed on the back part of the eye, the retina. When the lens becomes opaque, the rays of light from different objects do not pass through the lens and the vision is consequently lowered and the patient becomes more or less blind. If one places six sheets of glass, one on the top of the other, so that all are parallel, it is possible to see through them. If, however, one or more of the glasses form an angle or is not parallel with the rest, the layers of glass become cloudy, just like the layers which form the crystalline lens in cataract.

CAUSE — Cataract has been observed for many thousands of years by the people of India, Egypt, and in various countries of Europe. The theories of the cause of cataract are very numerous. The lens is composed of transparent layers. When these layers are squeezed or when the eye-ball is squeezed, the layers which form the lens become cloudy or opaque. It is a very simple experiment to take the eye of some animal which has been slaughtered and to hold it

with the lips of the fingers of one hand. By pressing the eye-ball, the lens at once becomes cloudy and a white mass, which can be seen at twenty feet or further, usually appears in the pupil. With the cloudiness of the lens, there may occur at the same time, a cloudiness in front part of the eye, the cornea. Just as soon as the pressure is removed from the eye-ball, the area of the pupil becomes perfectly clear and the lens becomes perfectly transparent. It is such an easy thing to try and is so convincing that more ophthalmologists may study it.

Pressure of the eye-ball may come from the contraction of the muscles of the outside of eye, which are quite capable of keeping up a continuous pressure for many years, without the patient being conscious of it.

Cataract has been produced in the normal eyes by the memory or the imagination of imperfect sight. The memory of imperfect sight produces a strain of the outside muscles of the eye-ball, which is accompanied by a contraction of these muscles, and cataract is produced.

Almost any kind of opacity of the lens has been produced by pressure. The area behind the pupil may become varicoloured, due to the difference in pressure. The strain of the eye or mind which produces cataract is a different kind of strain than that which produces glaucoma. Every symptom of eye trouble is caused by a separate strain. The strain which produces near-sightedness is a different kind of

strain from that which produces astigmatism or inflammation of the cornea or inflammation of the coloured part of the eye, the iris. The strain which produces pain is not the same strain which produces squint. One may practise the strain which produces squint continuously without necessarily producing pain. The strain which produces cataract does not produce pain. Cataract is a disease of the eye which is never accompanied by pain unless the patient with cataract also strains in a way which produces pain.

TREATMENT — Sindbad the sailor told many stories of his voyages which have pleased some adults and many children. I wish to maintain that some of his experiences were true while many were not. On one of his voyages, when sailing in the tropics, a violent storm struck the ship and he was wrecked on the shores of an island in the Pacific Ocean. As usual, most of the sailors were drowned but Sindbad lived to return home and tell of the wonders he had seen.

It was related by him that the island was frequented by the goats who were blind for a variable length of time. After a few days or weeks many of them recovered their sight, being cured in some way by a thorn bush which had large thorns. Sindbad watched them closely and discovered that each goat pushed each blind eye directly on to one of these thorns. After a few efforts the goat became able to see. How was it accomplished?

The cause of the blindness was the presence of an opaque body behind the pupil. This opaque body

was a cataractous lens. There are numerous operations for the cure of a cataract but all are planned to move it to one side, above or below the optic axis so that the pupil appears perfectly clear and permits good sight. Eye doctors during the period when Sindbad flourished had no other cure for a cataract except an operation such as the goats performed on their own eyes. It was done so easily, so quickly, and in most cases so successfully that many quacks or irregular practitioners who did not understand it failed to remove the cataract properly and the sight was not improved.

Sindbad wrote a great deal about the failures. He described how in many of the goats which operated upon themselves, foul matter would form and destroy one or both eyes. But when a goat did the things right, the eyes healed without any bad symptoms whatever. Sindbad's operation for the cure of cataract was described so long ago that there are still many doctors who claim that, as they had never heard of Sindbad, there never was such a person as Sindbad.

Modern physicians believe that the thorn is not the best instrument for removing the cataract in elderly people. Various and numerous operations have been recommended and practised with good results. When the operation is done properly, the vision is usually improved. After the operation is completed without accidents, strong glasses are prescribed, which improve the vision. Two pairs of strong glasses are used by the patient. One pair is to improve his distant vision, while a second pair with much stronger glasses

may be necessary for reading, sewing, or other near work. I do believe in operations when necessary or when medical and relaxation treatment fails to cure the trouble. Many cases have been greatly benefited by the treatment which relieves the strain. Cataract in the early stage can be treated more successfully. It is much better to cure the cataract so that the patient could have normal vision with a normal eye rather than to relieve the blindness by the removal of the lens. Curing rheumatism of the hand by an operation which removes the hand is not the best treatment. Medical or natural treatment without an operation will usually result in a cure. If relaxation fails to cure cataract we should consider this fact as an evidence that tension is not the cause of cataract.

We have received many letters of inquiry from patients having cataract asking the following questions: Can people sixty years of age be benefited? Which are the best methods of helping cataract patients? These questions were answered by the results of the treatment in a man who was 66 years old. He came to the clinic with a cataract so far advanced in each eye that he was unable, even with strong glasses, to read ordinary type. He was treated by relaxation of his eyes with the aid of shifting, swinging, memory, and imagination. *After the first visit, he became able to read large print without glasses.* His vision rapidly improved so that after some weeks of treatment, the cataract had disappeared and his vision for distance became normal. It was interesting to watch his

cataract disappear while he was forming mental pictures of the white spaces between the lines of black letters.

Many patients with cataract who knew about this old man asked me how it was that he was cured in so short a time while many younger patients were not cured so quickly. The word obedience suggests the answer ; the reason of this patient obtaining so prompt and permanent a cure was because of his ability to obtain a perfect relaxation of his eyes and mind as well as all the nerves of his body. For example, when he was told to close his eyes and keep them closed until he was told to open them, he did what was asked of him thoroughly and well. Many of my cataract patients do not practise central fixation as obediently as did this elderly patient.

So many people with cataract, when they close their eyes, feel that they are doing what they were told and cannot understand why they obtain so little benefit. Closing the eyes is not always followed by relaxation and rest. In short, there are many patients who strain their eyes more when they are closed than they do when they regard letters and objects with their eyes open. These patients are directed to practise the swinging exercises. The quickest cure of cataract is obtained by perfect memory or imagination. The memory of a black dot or the imagination of the thin white line just below the letters is a great help. It is found that when patients sit facing the sun with both eyes closed and move the head a short distance

from side to side, they show better results. Application of Opacitox oculose just before taking the sun-treatment proves beneficial.

Some cases of cataract acquire the ability to read without glasses very fine print held a few inches from the face. When such patients are recommended to read fine print several times a day, the cataract becomes less and the vision improves. The practice of regarding fine print or other small objects is one of the best methods of curing cataract.

STORIES FROM THE CLINIC :

1. A prominent man aged about 45, using bifocals complained that a cataract was developing in his eyes and the sight was gradually diminishing. He asked, "Is it really possible to cure cataract by Dr. Bates' method?" I said, "Yes, but one has to discriminate which cases can be benefited."

I tested his eyesight on the test cards and recorded the vision as follows:

	Distant vision	Near vision
Right eye	10/200.	No. 4 of the Fundamental card at 9 inches
Left eye.	10/50	No. 3 of the Fundamental card at 9 inches

The pupils were grey in colour, and showed signs of cataract in the dark room examination.

This patient used to see several moons instead of one. The thread-like floating specks before his eyes were very annoying to him.

I prescribed Opacitox occulose to apply to the eyes once a day just before the sun-treatment; and advised how to practise palming and swinging several times a day, and to read the fine print card and the Snellen test card. The patient left the hospital after having the instructions.

After a fortnight he again visited the clinic and complained that he received no appreciable benefit. I watched how he practised. His practices were full of mistakes. I advised him to visit the clinic every day for about a week so that he may learn to do the exercises correctly.

Palming usually did not give him relief. I directed him to stand, with his legs one foot apart, and to sway his body with a long, slow, easy swing, not noticing anything that came in his line of vision. He practised swinging several times a day and he found swinging exercise very relaxing to him.

After two days I added central fixation exercise to be practised on the Snellen test card at one foot distance. He could easily note that when he regarded the top of the letter, the bottom was seen worse; and when he regarded the bottom, the top was seen worse. Then gradually the distance of the test card was increased up to ten feet. Central fixation proved very helpful in improving the distant sight, and his vision on the seventh day was 10/30 with the right eye, and 10/20 with the left eye.

To improve the reading sight he practised on the Fundamental card. He was directed to glance only at

the white lines in between the lines of fine print and imagine them to be whiter than the margin of the card. He improved his imagination of the white line with the help of his memory of white snow and milk. Reading sight soon began to improve and he became able to read the fine print with each eye.

While walking in the street, he was told to keep his chin up to look ahead instead of looking down at the pavement, which had been his habit for many years. He was to imagine in this way that he saw the pavement coming towards him as he walked.

He left the hospital after one week with considerable improvement in his eyes. The floating specks completely disappeared and he saw only one moon instead of several.

After a few months this patient happened to come to Delhi to attend the Assembly Session, and came for consultation. The cataract had completely disappeared from both the eyes, and there was a healthy expression of his eyes. He told me how much better he slept at night since having had a course of the treatment. Since he has been cured, he is helping others and writes about his eyes and expresses his heart-felt gratitude.

2. CATARACT WITH DIABETES AND MYOPIA

An old man suffering from Diabetes attended the clinic. He was using glasses for high myopia for thirty-two years. For about three years the sight of the right eye was gradually failing. He was frequently consulting the doctors at Karachi and Bombay.

For about eighteen months the cataract was detected in the right eye, and for about seven months in the left eye. They prescribed new pairs of glasses for distance as well as for near vision and advised him to wait for the operation. As he was a diabetic, he was afraid of the operation.

I examined his eyes carefully. The vision of the right eye was very poor without and with glasses, and it showed a gray and opaque pupil. The left eye was better and showed early signs of cataract. I told him that the left eye could improve considerably but there was slender hope for the right eye. He was quite satisfied with this much hope and was ready to carry out all the instructions faithfully.

I applied Resolvent 500 in the morning and Opacitox occulose in the evening just before the sun-treatment. While palming, I made him comfortable with a cushion for his elbows to rest on it. I asked him to remember something perfectly and let his mind drift to something else. He was told that it was necessary to remember pleasant things; that otherwise his mind would be under a strain and his vision would not improve. Like many patients, he began to question me about what the mind had to do with the cataract in the eyes. He was told that when the mind was under a strain, all other parts of the body were also under a strain; when the mind was relaxed, the eyes were also relaxed and things were seen without effort or strain. Mind strain is always associated with eye-strain, and eye-strain is the cause of cataract.

While he was palming, the patient saw floating clouds of gray and flashes of light before his eyes, and he failed to see black. As palming was defective, I asked him to remove his hands and look at the black 'C' at six inches where his vision was best, and then close the eyes and remember the colour, and repeat until the memory appeared to be equal to the sight. It took two days to improve the memory of black with the closed eyes. Then he was instructed to practise palming and call to memory black objects such as black ink, board, paint etc. Palming proved very helpful to him in relaxing his eyes, and he used to palm for 15 to 30 minutes at a time. In the course of twenty-four hours he practised palming five or six times daily.

After palming he looked at the white centres of the letters on the Snellen test card at two feet distance and imagined them whiter than the margin of the card. While blinking and glancing at the white centre of the letters, he noted that the letters made short movements in various directions and soon they became blacker and distinct. Then he shifted his sight from side to side on the white line of the Fundamental card while moving the head a little from side to side, and imagined the white line of the fine print whiter, and noted that the black letters of the card appeared blacker than before.

At times he practised long swing and central fixation on the chart. Once or twice a week vapour bath was also given, and sometimes it was followed by nasal drops.

His improvement was quite satisfactory from the very beginning, and after one month and a half the cataract was almost dissolved in both the eyes. He could read the photo print separately with each eye; and could see distant objects with the help of his glasses.

3. CATARACT REQUIRING OPERATION

Another patient 50 years of age had cataract in the early stage in his right eye, and he wanted the eye to be cured without operation. I put him under the treatment for about 10 days. I noted that it was very difficult for him to practise in the right way. His old habit of seeing the things with effort or staring could not be overcome in the least degree. While swinging he stared at the front objects. I advised him that he was not fit for this treatment and that he should wait for the operation. A year after he happened to see me again. The cataract was in the mature stage and fit for operation.

4. AFTER-CATARACT

For more than 12 years I have been an eye surgeon and have performed a large number of cataract operations. It is only within recent years that I have stopped cataract operations because the number of patients requiring this new treatment has much increased and I find no time to look after the operative cases. Therefore when such cases come, I refer them to other eye surgeons for surgical treatment.

Some years ago a poor old man came to my hospital for cataract operation in the right eye. He had

a mature cataract which I removed on the next day. Unfortunately, a thin white layer called capsule remained inside the eye. The eye was bandaged. The wound healed, but after the bandage was discontinued the patient could not see anything. The whole pupil was white and again the cataract formed. This kind of cataract is called after-cataract which usually requires another operation.

I instructed the patient to come again after two months for another operation. At the same time I gave him a medicine to be dropped in the eyes after taking sun-treatment morning and evening. After one month he returned. He could see things and the whole pupil had become black, the after-cataract had dissolved and he needed no operation. I was surprised to see this cure of Nature. I asked him what he had done. He said, "I used to sit in the sun for one hour in the morning and one hour in the evening with closed eyes, and used to move my head and body from side to side as you said. Then I came to a cool place and applied the medicine that you gave me. For seven days there was no improvement in the vision, but after that the vision improved little by little."

I prescribed strong convex glasses with which he could see all right.

CHAPTER XVI

Iritis

Iritis occurs quite frequently. The cause has heretofore been ascribed to syphilis, rheumatism, or some other constitutional disease. Chronic cases are seldom cured until after months of persistent treatment. An important sign in iritis is a contracted pupil. Pain in acute iritis may be very severe and the vision is usually lowered. There is redness all round the dark portion of the eye-ball. Patients usually suffer much from photophobia or sensitiveness to light.

STORIES FROM THE CLINIC

I. A man had been in the habit of swimming and bathing in the sea. The exercise and the bathing seemed to agree with him perfectly and although he had been taking these baths frequently, no injury to his eyes could be detected. One night he was awakened by a severe pain in both eyes. The eyes became red and water was constantly flowing. In the morning he was nearly blind and felt much glare even in ordinary light. The doctor whom he consulted said that he was suffering from iritis. He had several such attacks before, and each time it took about one or two months to recover. He was treated with atropine drops, fomentations and bandaging. Milk injections were also given.

As it so happened, I was staying in the neighbourhood. In the morning he came to me with his eyes and head covered with a cloth, keeping his hands on the temples, accompanying an attendant. I examined him and found the iris inflamed and the pupil contracted. He asked me if I thought that his eyes had been infected or if he had injured his eyes by striking against water when he took a dive. I told him that I did not believe that it had anything to do with it, and that his trouble was caused by mental strain.

I gave him one strong enema which caused about eight motions. It gave him good relief. He was advised to take sun-treatment and do palming every two hours. Atropine solution was dropped in his eyes. On the next day he was nearly all right. The redness of the white part of the eyes had entirely disappeared. The pupil was no longer contracted. His vision had sufficiently improved.

He was much pleased that the sun-treatment had been of marked benefit. He said that he had read in many books that persons suffering from iritis should protect their eyes from the injurious effects of light by wearing dark glasses. He also said that he was convinced that the sunlight and other forms of light were a benefit to his iritis and not an injury.

His condition continued to improve, and in a few days he was able to read the large type of a newspaper without discomfort. I said to him: "Why don't you read the small type?" He answered that he was afraid he would strain his eyes. My answer to this was to

hand him a card on which were printed some sentences of diamond type. He was able, much to his surprise, to read the diamond type at about six inches. This amused him so much that one could hear him laughing from a long distance. He compared his ability to read fine type with his ability to read the large type of a newspaper and found that the diamond type was easier. He said: "Why is it that I see the diamond type easier than I do the large print?" I replied that in order to read the diamond type his mind was relaxed. If he strained, he could not read it. If he could not read it, he strained. He was advised to read as much diamond type as he had time for.

The patient was encouraged to keep up the treatment until a complete cure was obtained.

CHRONIC IRITIS AND CATARACT

2. Lord A. Sinha of Raipur came to me to ascertain whether anything could be done to prevent blindness of his left eye. The right eye was totally blind. The following history of his case was given by him.

He began to use glasses of -1.5 from the age of 20 but the sight gradually was deteriorating, so he had to change his glasses quite frequently. The last pair of his glasses was of -5.5. In 1906, when he was in London, he got inflammation in both the eyes. The eyes had become red and their sight very poor. The doctors diagnosed haemorrhage inside the eyes and iritis. For eleven weeks he remained in the dark room with bandages on the eyes; and necessary treatment was given to him. Gradually the eyes became all right.

Then after a few months he had another attack of iritis. Such attacks continued to appear every two or three months, and each attack caused dimness in the vision and the sight was permanently affected. Heavy meals and indigestion aggravated the attack.

In 1918, while he was in Calcutta, he got a severe attack of iritis and hæmorrhage in the right eye. The doctors used atropine and gave saline injections in the eye. The attack took about 7 weeks to disappear but the sight was permanently damaged and the vision became misty and hazy.

In 1926 a German doctor examined his eyes and diagnosed cataract in the right eye. He found that the iris was adherent to the lens nearly from all sides so he did not advise any operation for cataract.

In 1935 the famous specialist Dr. Vogt of Switzerland advised immediate operation, and he performed about five operations at intervals on the right eye. Every time the operation caused bleeding. Ultimately the eye became totally blind and the whole cornea became opaque.

The left eye had also cataract and adhesions of iris with the lens. The sight was decreasing gradually and he was very much worried. He consulted many specialists all over Europe and India if they could do anything to save the left eye. Some advised operation while others were opposed to it, but none gave any definite hope.

I examined his eyes in March 1943 and found that the right eye had no hope but the left showed some

chance of recovery. The pupil of the left eye was very small. Floating specks and mist blurred its vision very much but at times the mist was less and he felt the vision better. This symptom gave me a little hope and I took the case under treatment. His vision with the left eye was $3/200$ without glasses and $3/100$ with glasses. He could hardly read No. 1 of the Fundamental card at four inches. As he felt much glare even in ordinary light, he used dark glasses most of the time. When he looked at me without glasses in a dimly lighted room, the expression of his eyes and face indicated great strain, the eyes were widely open and did not blink at all. As he could not see the things clearly so he acquired the habit of staring. When I asked him to show me his handwriting, he said that he was unable to write for one year. For walking he needed some guidance.

My first attempt in his treatment was to produce rhythmic movements in the eye as the eye seemed to be stationary due to long staring habit. I advised him to sway his body gently from side to side for most of the time while his eyes were closed, and to open them just a little only when necessary. I educated him in blinking and palming which he practised consciously several times a day. He preferred swinging before a swing stand. Sun treatment was not agreeable in the beginning but later on he liked it very much. At times sun rays were concentrated on the eyelids and sclera by frequent movements of the sun-glass. After a few days' treatment a mild attack of iritis with redness and watering in the eyes appeared. This was a

matter of anxiety as the vision became more dim. His wife thought that now there was no chance of improving his eye, as the attack could not subside before some weeks. I was encouraging them all the time. I gave him a purgative, bandaged his eyes and asked him to practise swinging with the bandage on the eyes. At the same time I administered atropine lotion 1%. In two days the attack completely disappeared and the eye showed better chance of improvement.

Vapour bath and nasal drops proved very helpful. At first he was afraid of the nasal drops as they irritated the throat and produced some inconvenience, but when he noticed their good effect, he himself asked me to use them frequently. I regulated his diet and advised him to take Milk of Magnesia once or twice a week. Along with all this general treatment I applied Resolvent 500 just before sun treatment. When the sun was not hot, at times I focussed the rays of the sun with a magnifying glass on the closed eyelids. His imagination was poor and he felt strain in palming. Swinging before the swing stand and central fixation on the charts proved quite efficacious. Gradually the sight improved and he began to read the smaller letters on the Fundamental card. I encouraged him to shift his sight on the white spaces of the fine print of the card and blink frequently. He read one sentence after another of the entire card. Then I instructed him to practise writing in the right way. I explained that the wrong way of writing was to try to read the back letters or words already written while writing; and the right way was to shift the sight and blink

with the movement of the pen. After a few days' practice he received an important letter from his friend. As there was none with him at that time he tried to read the letter and to his great surprise he was able to read it. Then he sat to write the reply and wrote beautifully. He thought that if his sight had really improved, he would be able to read a newspaper. A copy of the 'Statesman' was lying on his table, he took it in his hand and began to read it. When I examined him I found that the pupil of the eye dilated, the iris showed healthy signs, and the lens showed black marks of broken adhesions.

After completing one month's course of treatment Lord Sinha left the hospital with his heart full of gratitude. He called the improvement in his eye miraculous though the vision was very far from normal. When he reached Calcutta he consulted his eye specialist and wrote to me the following lines :

"I am continuing the treatment here regularly. I find my improvement maintained and my eye specialist examined my eye in a dark-room with the slit-lamp. He found adhesions broken, the pupil slightly larger, and answering to light by contracting and dilating which it did not do before. He found the eye, certainly, improved a little and healthier. He will naturally not praise too much but I do find I can read and write better and the near vision is better."

CHAPTER XVII

Diseases of the Retina

RETINITIS AND CHOROIDITIS

Many patients suffer from imperfect sight on account of retinitis in old age and frequently complain of dimness in vision, floating specks before the eyes and difficulty in walking about in the night. It is usually accompanied by choroiditis and the condition is then called retino-choroiditis. The condition is easily recognised in most cases with the aid of the ophthalmoscope.

It is a general belief that syphilis is the most frequent cause of retinitis or retino-choroiditis, and patients are treated by giving small doses of mercury and potassium iodide. They are advised to protect the eyes from light by dark glasses. Sometimes injections are given in such cases. All such treatments usually fail. The condition of the eyes becomes worse in some cases after getting injections or other such treatments.

In fact eye strain or the mental strain is the real cause of retinitis or choroiditis and the relief of eye strain always improves the vision and the condition of the retina. In some cases, it is more difficult to relieve the strain than in others. No matter whether it is

difficult or not, the patient is benefited if he keeps up patience to carry out the treatment. Application of Resolvent followed by sun treatment and the perfect memory of mental pictures prove very useful. Reading of fine print or photo print is recommended to all patients. Deep breathing is very helpful. Constipation should be attended to. Vapour bath and nasal drops prove very efficacious in some cases.

STORIES FROM THE CLINIC

1. RETINO-CHOROIDITIS: A man of thirty-two had suffered from fever at the age of eleven, and remained in bed for about 25 days. A few months after the recovery he noted that he could not see the letters and figures on the blackboard in the class and his eyes began to trouble him. The doctor diagnosed myopia and prescribed glasses of minus two for constant use. In spite of the constant use of glasses the vision went on deteriorating. The next fifteen years were a succession of examination by the specialists, each one prescribing stronger glasses which gave no relief to the persistent pain and discomfort. They diagnosed it to be a case of progressive myopia. The last pair of glasses was of minus eleven for the right eye and minus nine for the left eye. These glasses also did not give him good vision and the doctor did not prescribe higher powers as he could not get better vision. He was employed in an office and it became difficult for him to carry on the office duties. Sometime after the officer asked him to consult the Civil Surgeon of that place. The Civil Surgeon told this patient that he had an incurable

eye disease, Retino-Choroiditis, and that nothing could possibly be done to save his sight. He recommended dark glasses to be put on his old ones. The patient was very much upset and ran to other eye specialists who diagnosed the same disease in his eyes and told him that the disease would increase slowly and they did not expect blindness until the age of 50 or 60. He felt very much disappointed. He was noticing that his field of vision was gradually contracting and night-blindness was developing. Floating specks and light sparks frequently appeared before his eyes. He lost the control over his eyes and the eye-balls moved irregularly and a condition called nystagmus developed.

The officer granted him leave for six months. The patient went to a physician friend who had read my articles in the Indian Medical Journal. The doctor recommended my clinic to him very strongly and he immediately started for Delhi.

His right eye was nearly blind even with glasses. I recorded his vision as follows :

Right eye: 2/200 without glasses and 5/200 with glasses. He could hardly see a few letters of the Fundamental card at 3 inches.

Left eye: 5/200 without glasses and 10/50 with glasses. He could read No. 5 of the Fundamental card with difficulty at 4 inches.

On the first day of the treatment his glasses were removed and he was told that they were never to be

put on again. This was a great shock to him as all the doctors had greatly stressed the fact that the glasses were to be left off only during sleep. For a few days he kept the eyes closed and opened them just a little when necessary. In this way his habit of keeping the eyes wide open was checked. He was taught blinking and he took several days to learn to do it in the right way. At times he blinked with effort which soon caused strain on his eyes. He palmed frequently and during palming he remembered how I demonstrated blinking to him. Then he took the mirror in his hand and blinked while keeping up the memory of right blinking. He could note in the mirror whether he blinked in the right way or in the wrong way. I told him that to blink in the right way it was necessary to keep the upper lids down ; but to keep the lids down does not mean to screw or squeeze the eyes.

He took sun-treatment with the eyes closed several times a day. While taking the sun-treatment he moved his eye-balls in the opposite direction to the movement of his body and head. This was a sign of strain, so I asked him to move his eyes with the movement of his body and head. When he moved to the right he imagined as if he were looking to the right, and when he moved to the left he imagined as if he were looking to the left. After sun-treatment and eyewash he practised palming for fifteen minutes each time. Then he was taught the swing, in other words to see or imagine everything moving. Swaying the

body from side to side became a sort of habit with him.

By imagining everything to be swinging—noticing the movements of all things when walking, and the buildings and pavements gliding past as he moved forward—spending a good part of each day in the sun, his vision was improved. After 15 days of this treatment I added central fixation exercise to be practised on the Snellen test card at nine inches where his vision was best. Gradually he increased the distance to five feet. He frequently read the fine print card after central fixation and palming. At times he was given vapour bath and nasal drops. Every morning he performed deep breathing exercises.

In a month's time the left eye could easily read the photo print, and for distance its vision was 10/40 without glasses. The right eye showed poor improvement so he practised with the right eye separately also by covering the left eye with an eye shade. The improvement in the right eye was slow but steady. After three months of treatment this eye too became able to read the photo print and for distance its vision was recorded 10/70. He could read books and newspapers at nine inches quite easily. He could walk about in the night but still it was not normal. The pain and other discomforts disappeared. With glasses his vision became normal and he resumed his office duties working most of the time without glasses and without discomfort.

2. RETINITIS AND HYPERMETROPIA: A woman came to me who was affected with retinitis and

had periods of temporary blindness. She was not with me longer than five minutes when I noticed that she was under an intense mental and nervous strain. When I spoke to her, tears welled up in her eyes. Every part of her body was tense and the white parts of her eyes, i.e., the sclera, looked blood-shot and she had no desire to keep the eyes open in a natural way.

She told me that she had trouble with her eyes as long as she could remember. Blocks of dark spots were visible before her eyes at all times. Straight things appeared curved and at times objects seemed to be double. She said she always kept her glasses near her bed so that she could put them on as the first thing to be done in the morning. The day light caused her a great deal of discomfort and pain and most of the time she had a desire to keep her eyelids lowered. When she was wearing her glasses, she felt more depressed than when not wearing them. Her eyes itched and she had rubbed her eyelids until they had become sore. When I tested her sight with the test cards, her vision in the right eye was 10/50 without glasses and 10/30 with glasses. The vision of the left eye was 10/80 without glasses and 10/50 with glasses. She could hardly read a few lines of the Fundamental card.

I applied Resolvent in her eyes and made her sit on a chair facing the sun. This seemed to her a strange thing to do, as previously she had worn blue glasses to shield her eyes from strong light. I encouraged her to palm and while her eyes were closed, I asked her to talk about her loved ones at home. As she told me about some of their habits and how she loved them, I

noticed her smile for the first time. I told her to uncross her knees for more relaxation and rest. She was taught to stand with her legs one foot apart and sway her body from left to right, flashing the test card letters, one at a time. I reminded her many times about blinking in order to stop the stare, for she stared a great deal. When she finally learned how to blink while swaying, her vision improved considerably. I asked her to shift her sight from the white spaces of the photo print, to the white spaces between the lines of the fine print of the Fundamental card, looking only at the white spaces and avoiding the reading of the print. This practice was kept up for about half an hour and I then suggested that she might notice the numbers at the beginning of each sentence of the Fundamental card. She was told to notice the white spaces of the different types as she held it in her hand. Before her first treatment was over, she read the sentences from number one to number five.

At the beginning of her second treatment she said that the food placed before her at the table was beginning to look like food to her before she ate it. Before, she never knew that she was eating until she tasted it.

Sun-treatment was kept up regularly every day. This improved her vision for the test card and fine print to normal. I handed her a newspaper and pointed to the smallest type that I could find on the front page. The smallest print was about the size of the diamond type. She read this clearly for the first time in her life. During her second treatment, when she

held the card in the sunlight, her vision improved for the fundamental card to number eight.

After several treatments she told me that her friends were noticing how much younger she looked. The sclera of both eyes was clearing up and she was smiling most of the time. She became able to read the whole Fundamental card at reading distance, ten or twelve inches from her eyes and sometimes closer. The blind spots and black spots that had appeared before her eyes for many years, also disappeared. She was told to remain in the sun for an hour at a time, keeping her eyes closed while her head moved slowly from side to side. She was advised to sway the body and she did this a hundred times in the morning and a hundred times at night before retiring.

She told me how much better she slept at night since having had her first treatment. She said it had been many years since she had had a restful night's sleep. She enjoys walking fast on the street now, noticing stationary objects moving in the opposite direction as she walks. She reads numbers in the telephone book and other print that was not clear before. She could thread any size of the needle. One day I drew her attention to something in the sky. She pointed to that object and said, "It is a kite, I can see the tail clearly." Since she has been cured, she is helping others and writes about her eyes continuing to be a blessing to her. This patient has proved again that faithful practice and patience bring about the much desired result, —normal vision.

RETINITIS PIGMENTOSA

There are many cases of imperfect sight which are congenital, that is, people are born with different diseases of the eye. Retinitis pigmentosa is usually congenital. The condition is easily recognised in most cases with the aid of the ophthalmoscope. In all cases, the retina is covered, more or less completely, with black areas. These black areas are about $\frac{1}{30}$ of an inch in diameter. They are very irregular in size and shape. In severe cases of retinitis pigmentosa, the retina may be covered so thickly by these black specks that the retina cannot be seen.

Most cases give a history of poor sight from birth. At first, only a small number of black spots are visible, but after the child is twelve years of age or older, the number of these spots increases gradually. As the spots increase, serious changes take place in the back part of the eye. The optic nerve becomes atrophied, but the atrophy does not increase sufficiently to produce complete blindness. The middle coat of the eyeball gets inflamed and floating specks are seen in the vitreous (fluid in the back part of the eye.)

Most cases of retinitis pigmentosa acquire cataract before they are thirty years of age. There are exceptions to this rule, however. Some patients acquire retinitis pigmentosa after they are fifty years of age or older. One characteristic of retinitis pigmentosa is that the vision is always changing, sometimes for the better, sometimes for the worse. One very common symptom that is usually present is night blindness.

Treatment for the cure of night blindness helps retinitis pigmentosa. In some cases myopia is present and it is of a kind which it is difficult to cure.

All patients who were suffering from chronic retinitis pigmentosa had changes in the optic nerve which were very characteristic. In the first place the blood vessels were smaller than in the normal eye and the veins just as small if not smaller than the arteries which emerged from the centre of the optic nerve. In most cases the middle coat of the eye-ball becomes inflamed and usually much black material is found in the vitreous. Well-marked changes take place in the crystalline lens. The back part of the lens becomes cloudy and this cloudiness moves forward toward the centre of the lens and clouds all parts of it so that the vision is lowered by the opacity of the lens as well as by the more serious changes which occur behind the lens.

It is a prevailing belief that retinitis pigmentosa is incurable and that when it becomes manifest in its early stages, the condition goes on increasing and the blindness becomes more decided.

The clinical reports of cases of retinitis pigmentosa confirm the fact that a strain or an effort to see hastens retinitis pigmentosa. When the patient makes an effort to improve the vision, it can be demonstrated in every case that the cause of the eye trouble is always due to this effort and the cure of the disease is always obtained by relaxation methods. When the disease is in the advanced stage, it is difficult to bring out good improvement.

Sun-treatment, palming, swinging, and reading fine print usually prove very helpful but the best methods are the exercise of perfect memory or imagination. If the memory or imagination is imperfect, the disease is not completely relieved or benefited. When one letter of the Snellen test card is seen perfectly, it can be remembered or imagined perfectly. There is no procedure which yields better results in the cure of this eye trouble than the memory of a part of a letter which the patient can demonstrate. It is very interesting to observe that in these cases the memory and imagination are capable of bringing about the absorption or disappearance of organic conditions. This makes it possible for this treatment to accomplish results readily, quickly, when all other treatment is of no avail. These observations are amply testified in the following case report.

A girl fifteen years of age had suffered from retinitis pigmentosa from birth. The disease was rapidly progressing and it did not seem that any relief would be obtained by any form of the usual current treatment; the patient was simultaneously suffering from progressive myopia. Relaxation treatment, the correct use of her memory, and imagination improved the progressive myopia and much to the delight of the patient, the retinitis pigmentosa improved at the same time and continued to improve until all traces of the disease were absent and she was permanently cured.

It seems to be one of the peculiarities of the disease that it is variable. Oftentimes it gets better

for a short time when all of a sudden, overnight perhaps, the disease will return with all its accustomed forms of black pigment spots, atrophy of the optic nerve, diminished circulation and incipient cataract.

Retinitis pigmentosa has been observed in cases of glaucoma, in chronic cases which progressed with more or less rapidity until almost total blindness was observed. In other cases, different parts of the choroid would be destroyed, and there would be loss of vision in these areas.

The vision of children of ten years of age, suffering from this disease, has been remarkably improved by swinging them in a circular direction several times daily for many weeks. This promotes relaxation. It is a mistake to dispose of cradles, rocking chairs, and other appliances useful in promoting the swing. The long swing is a very efficient method of obtaining relaxation. Many people object that children have not sufficient intelligence to practise the swing successfully. On the contrary children of ten years of age or under can practise the long swing as successfully as many adults. It is a treatment that the patient enjoys to a decided extent. Games of all kinds should also be encouraged. It is well to protect the child from adults and others who make the child nervous. Nervousness always causes strain. Laughter and good times are relaxing. The kindergarten is a good place for all children at an early age, because relaxation methods of the best kind are taught there.

Before closing, reference should be made to a girl fourteen years of age who cured herself of retinitis pigmentosa by playing games and engaging in sports that she enjoyed. In the summer she enjoyed swimming and diving from very great heights; in the winter she practised skating, devoting long periods of time to this sport. Besides the relaxation methods which I have described, it is worth while to teach the children who have so-called incurable diseases how to enjoy themselves for long periods of time both in winter and in summer. Their eyes as well as their bodies are kept in motion while playing games or engaging in sports which relieve the stare and strain that cause imperfect sight. It is much more efficient and better than drugs.

Story from Dr. Bates' Clinic: A Patient's report.

"I began to wear glasses for short-sight when I was fifteen, and from that time I wore them constantly until I came to Dr. Bates. For the last two or three years I never took them off, except for close work, until I got into bed at night, and before I got out of bed in the morning I put them on again.

In spite of these precautions my sight became steadily worse, and for the last ten years I have spent my time and money going from one specialist to another both in this country and in Europe. Three of the most famous specialists in Switzerland told me that I had retinitis pigmentosa, a condition in which pigment is deposited in the retina and which, I was told, always ended in complete blindness if the patient

lived long enough. Nothing could be done to prevent this outcome, they said, but they advised me to wear dark glasses when I went out of doors on bright days, because by exposing my eyes to strong light I was spending my capital. For the last three years I did this, and last year, on very sunny days, I often wore dark glasses in the house also, because my eyes had become so sensitive to light that I could sometimes find relief only by going into a darkened room. Even with dark glasses and drawn blinds, there was a kind of razzle-dazzle before my eyes which was so maddening that I almost longed for the blindness with which I had been threatened, so that I might be free from such distresses. When I looked out of a window into a sunny street and then back into the room again, everything became perfectly black for a minute. For the last two years and a half I have not been able to go out alone in the city.

In this state of utter hopelessness, with my sight rapidly getting worse, I heard of Dr. Bates through a patient whom he was treating, and in spite of what I felt to be the incredulity of my friends, although they were considerate enough not to express it, I lost no time in consulting him. The unusualness of his methods, while it excited the suspicion of others, was a recommendation to me. I knew what the old methods accomplished, or rather what they did not accomplish, and I wanted something different. It seemed to me that Dr. Bates was the very man I had been looking for.

My friends have now been converted, but, in spite of the fact, that I am able to report substantial improvement in my vision, I still meet with much scepticism in other quarters. A doctor to whom my progress was reported by a friend wrote to her that if my troubles were imaginary Dr. Bates might help me through hypnotism or mind cure, but that if there were anything really the matter with my eyes he could do nothing by his methods. One who had met some of Dr. Bates' cured patients and was inclined to believe in him said, that he was being treated for retinitis pigmentosa :

" Good gracious, he surely does not pretend to cure retinitis pigmentosa ! That is an organic disease."

I said that he not only pretended to cure it, but had made substantial progress in my case. The doctor said:

" I think he'll help you, but I don't believe you are ever going to see without limitations."

The improvement in my vision since I have been under treatment has been indisputable. After two weeks the intangible suffering caused by light left me, and it has never returned. I can go out in the brightest sun-light without glasses of any kind and, although my eyes feel weak and I squint a little, there is no real distress. I can look out of a window into a sunny street and when I turn back again into the room there is no blindness. When I first took off my glasses I had to bend over close to my plate when I was eating, in order to see what was on it. Now I sit in an almost normal position, with such a slight bend

that I don't think anyone would notice it. I also operate a typewriter while sitting in a normal position. For three years it has been very difficult for me to read or sew, with or without glasses. Now I do both without glasses and instead of the distress which these activities formerly caused me, I experience a delightful feeling of freedom. And not only can I read ordinary print, but I can read diamond type and photographic reductions. About a year ago I began to lose my colour perception and only two weeks ago I was unable to distinguish the rug from the floor in the doctor's office. Now I can see that the floor is red and the rug blue, tan and black. At the time of writing I have just become able to observe that a couch cover in my apartment, which had always appeared blue to me, is green. I am still unable to see very much at the distance. But I am beginning to make out the features of the people around me and to read the signs in the streets and street-cars and when I look out of the windows on the Subway, I see the people on the platforms. My field is still very limited, but I am conscious that it is slowly enlarging. The other day I pinned a piece of paper three inches from the test card, and was able to see it while looking at the card. After such improvement, in the brief period of five weeks, I do not feel inclined to credit the prediction of my medical friend that I am going to regain my sight only with limitations. I hope I am going to get normal vision.

Along with the improvement in my sight there has come also a remarkable improvement in my physi-

cal condition, the natural result of freedom from suffering. I used to be a very restless sleeper and when I woke in the morning I was greatly fatigued. Now the bed is as smooth in the morning as if I had never stirred all night and I am much more refreshed than I used to be, although not so much so as I hope to be later. Formerly I had to force myself to write a letter. Now it is a pleasure to do so, and I am clearing off all my correspondence. I could not attend to my accounts. Now I have them all straightened out. If I could receive nothing more from the treatment than this physical comfort and increased ability to do things, it would be worth while."

Detachment of Retina

When the retina, the inner of the three coats of the eye-ball becomes separated from the middle coat (Choroid) to which it is normally attached, the condition is called detachment of the retina. Usually the patient complains of loss of vision, periodical dimness of vision, flashes of light, appearances of sparks, dust before the eyes. The field of vision becomes less and the vision of objects straight ahead is good so long as the centre of sight (macula) is not involved. Patients may suffer from vertigo and pain also.

Detachment of retina frequently occurs in high degrees of myopia. Statistics show that one-third of all cases of extreme myopia sooner or later develop detachment of the retina, at first in one eye and afterwards in the other eye. It may occur in normal eyes

without any inflammation of other coats. Mental or ocular strain is the principal cause of detachment of retina.

TREATMENT — The ordinary treatment usually resolves itself into either prolonged rest in bed in the hope that the retina may return to its place, or operation treatment by puncturing through the outer coating of the eye (sclera) behind the detachment. The most popular operation is diathermy treatment. Ball in his "Modern Ophthalmology" states :

"The treatment of retinal detachment is unsatisfactory — in fact, almost a hopeless task. While in a few rare instances, the retina has become reattached spontaneously, and a few recoveries have followed prolonged rest on the back, with hypodermic injections of pilocarpine and the administration of saline purgatives, the majority of successful results thus far reported have been attributed to surgical intervention. All operations are dangerous. In detachment following myopia, the prognosis is unfavourable."

In the course of a life time, most ophthalmologists have seen one or more cases of detachment which recovered spontaneously or without any treatment. This fact suggests that if some patients recover without treatment, detachment is curable under certain conditions. Strain is the principal cause and relaxation is its treatment. Among the many relaxation methods Swinging and Palming prove very helpful. Gradually the eye is accustomed to the sun.

STORIES FROM THE CLINIC—

1. The numerous letters we receive from correspondents come usually from those who have myopia or presbyopia; cases of detachment of retina are few. So I was specially interested in a letter which came from an engineer about 50 years of age who had detachment of retina in his left eye. This eye had myopia. He wrote a long story about what his doctors had said to him and he was very much afraid of operation. He was much worried because he was going to lose his job also. He wanted my help and I wrote to him to come to Delhi for proper treatment.

He had two pairs of glasses—one for reading and the other for distance. His vision without glasses was 20/40 with the right eye and 10/200 with the left eye. With glasses his vision was 20/20 with the right eye and 10/70 with the left eye. He could read the fine print with the right eye but only No. 1 of the Fundamental card with the left eye.

This patient had a wonderful memory and it was not hard for me to help him while he was palming. I asked him if he could imagine that he was writing his name with pen and ink on a sheet of white paper. He said he could do that easily. I directed him to spell his whole name and then imagine each letter, and to place an imaginary dot at the end of his name. I asked him next to forget about his name and remember the dot, which he was able to do, and then he remarked, "The dot seems to move, it doesn't stand still." Immediately after that I told him to open his eyes

gently and glance at the white centres of the letters of the card, first with both eyes and then with the left eye. His vision in this short time improved to 10/70 without glasses.

He was asked to palm again. After palming he practised long sway (i. e. more than an inch) before a swing stand and then gradually he shortened it to one inch. He was able to practise the short swing before a test card and could imagine each letter making short movements. After the time of practice his left eye was bandaged lightly to avoid staring. He got this sort of treatment several times a day and each day he showed some improvement.

After a week's treatment the bandage was discontinued but the patient continued the relaxation treatment for more than a month. When he was excited or talked fast, he forgot to blink and felt strain in his eye. Soon he was reminded to relax by his wife who was all the time with him. Gradually the time for sun-treatment was increased. When he left the hospital his vision in the left eye was 10/50 without glasses and 10/20 with glasses. He could read the finest print without glasses.

2 Another patient with detachment of retina who was cured by the relaxation methods, writes:-

" I began to wear glasses of - 1 when I was of 13 years of age and since then I have been using them constantly, but the wonder is that instead of the glasses being able to cure my sight or to improve it or

make it stationary, it is getting worse day by day with the result that at present the glasses I am using are of -13.

On the 9th of October 1933, in the afternoon, my right eye, all on a sudden, became blind. I at once ran to Patna for diagnosis and treatment. On the 14th of October I was admitted into the Patna General Hospital in the paying cabin under the advice of the eye-specialist in charge thereof. I stayed in the hospital for ten days, but to my utter surprise, there was no appreciable improvement at all in the eye, However, on my leaving the hospital, I also consulted the retired eye-specialist of Patna General Hospital and placed myself under his treatment also. Both the doctors treated me for about one month and wanted to give sub-conjunctival injections in my right eye. Both the famous and prominent eye specialists diagnosed the case to be one of detachment of retina with haemorrhage and prescribed one and the same medicines. The doctors wanted to treat me still when there was no appreciable improvement so far and when they were doubtful of the restoration of my former vision, that is to say, when they were doubtful of my complete and radical cure thereof. This was evident from the fact they never gave out to me as to how long it would take to cure me but that they always used to say that in this case progress, if made, would be very slow.

Fortunately I had to come to attend my special session of the Assembly which was to commence on the 9th of November and accordingly I came over

here and consulted Dr. R. S. Agarwal, Specialist in the cure of imperfect sight without glasses, and placed myself under his treatment from the 19th of November. I am acquainted with the doctor since March 1932. When I saw him at his Delhi office, he put me on some very simple eye exercises. Hardly one and a half month have elapsed and my right eye can very well enjoy the nature and I can now read even the fine print. The vision has become much better even than before. The myopia in both the eyes has, to my utter surprise, decreased to a considerable extent. The letter that I could hardly see at two feet distance before can be seen now at twenty feet distance or even more.

The results in my case cannot but be called miraculous indeed, in view of the fact that I was considered incurable. It is my sincere desire to express in these few lines my appreciation to the man who brought me out of the world of darkness so to say. Any amount of praise that I may shower upon Dr. Agarwal will not be enough.

Today my satisfaction is complete about his treatment and I think that in this world there must be many unfortunate ones like myself. How much would I like to have this message reach them!"

3. A man of 42 had detachment of retina in the left eye. He was advised by doctors to take absolute rest in bed, to take only liquid diet, to avoid chewing and to pass motions and urine also while in bed. No movement of the head was allowed. It was very troublesome for the patient to keep himself

under such restrictions but he was ready to do any thing the doctors advised, provided there was hope of recovery. The doctors simply suggested the treatment and expressed their inability to cure the disease either by medicine or operation.

In fact, rest or relaxation is the right treatment because detachment of retina is caused by strain; but what a poor idea of rest and relaxation these doctors have! Any part of the body when kept stationary gets strain and discomfort. Strain of the body means the strain of the mind. A very simple example is that of keeping the leg or hand stationary and feeling numbness and loss of function of the organ. It is the swing that gives real rest and relaxation to the mind, eyes and body. Advising the patient to remain in bed without movements is impracticable, unscientific and unhygienic. Gentle swing of the body and head from side to side immediately gave relaxation to this patient; soon his sight began to improve and his field of vision began to increase. He was free to move about with the diseased eye bandaged, but he was instructed to imagine the side objects and the road moving backward while walking, so that the relaxation may be maintained.

Though his improvement was quite satisfactory, yet he was not satisfied as he had not yet reached his normal condition. I had not charged the patient any fees as he was introduced by a doctor friend of mine. He went to Bombay to get further improvement. He was eager to spend a large amount. There an eminent

eye-specialist put him in bed for complete rest and began to give sub-conjunctival injections in the eye. In course of time all the improvement was lost and the retina became atrophied.

At that time I realized the value of taking fees from the patients, but that should never override the idea of service. In my clinic I allow all classes of patients and my policy is that no patient should go away from my clinic simply because he could not pay. Though a schedule of fees has been fixed up but that is not strictly followed. Some patients are left to themselves in the matter of payment, some are treated free, some pay more than the usual rates. Whatever fees are taken, it is the sincerity of the doctor and the patient which brings good results. I have noted that most patients leave my clinic with good feelings, even though they have had to pay high charges. This does not depend upon the amount of benefit that the patient gets, which may be more or less; but it is due to the fact that the idea of service is never lost sight of. Even those who do not get any benefit value the work that is done for them. Patients who tried to cheat me, got no benefit or the circumstances became such that they had to leave the clinic without my asking.

CHAPTER XVIII

Diseases of the Optic Nerve Optic Neuritis

It is a common belief that optic neuritis or optic atrophy is mostly due to syphilis or some other infection in the system or teeth. The following facts may be observed regarding optic neuritis cases :

1) Many people suffer from syphilis or some other infection but only a very few out of them suffer also from optic neuritis, and those who suffer from optic neuritis are usually not benefited by anti-syphilitic treatment or anti-toxin treatment or by extraction of teeth.

2) Some cases of optic neuritis do not give any indication, by tests or otherwise, of syphilis or toxin or bad teeth.

3) Some cases of optic neuritis whether they suffer from any infection or not recover partially or completely themselves by rest without any specific treatment.

How can these facts be reconciled with each other if syphilis or some other infection is the cause of optic neuritis?

The following case is a good illustration to explain and reconcile these facts.

S. R. of Delhi, aged 61, was feeling deterioration in the vision of the left eye, and on the 10th July, 1944 he visited Bombay and consulted two prominent eye-specialists of the place. Both the doctors diagnosed optic neuritis in the left eye and advised the patient to go under different tests. They were of opinion that the condition was a serious one.

The patient's blood, urine and stools were examined in Bombay and Delhi and the sinuses were X-rayed. Nothing abnormal to account for the trouble of optic neuritis could be detected. Wassermann Reaction was found negative. A diagnostic antrum puncture was done and the result was found to be negative. Again new X-rays of the pituitary fossa and the optic foramen were taken, and the Radiologist admitted his inability to pass any judgement regarding the cause of optic neuritis.

I examined the patient on the 19th September, 1944. Vision in the left eye was 1/60 faint, which could not improve with glasses. There was total colour blindness. Light-sense had much deteriorated. Biophotometer test revealed that he could see two dots at 0 degree. The ophthalmoscopy showed signs of optic neuritis. The pupil was normal. Right eye was in normal condition.

His expression of the eye and face indicated that the left eye was under a great strain. My immediate feeling was that the cause of unilateral optic neuritis in this case was eye strain. Moores Ball mentions in 'Modern Ophthalmology' that errors of refraction and eye strain are also the causes of optic neuritis.

But what is eye strain and what are the symptoms when the eye is free from strain and when under strain?

Normally the act of seeing is passive. Things are seen, just as they are felt or tasted or heard, without effort or volition on the part of the subject. When the eye is free from strain, it never tries to see. If for any reason, such as the dimness of the light or the distance of the object it cannot see a particular point, it shifts to another. It never tries to bring out the point by staring at it. If the eye makes an effort or stares at an object, consciously or unconsciously, its normal function is disturbed and imperfect sight is the result. The following experiment is a good illustration:

Fix the sight on any small letter of the Snellen eye chart and then try to see several of them. Soon the letters become blurred, and trying to see them blurs them more.

This shows that imperfect sight is produced by a strain or an effort to see. Let us now consider what are the other symptoms when the eye is free from strain and when under strain.

1. CENTRAL FIXATION: The retina of the eye has a point of maximum sensitiveness called 'fovea centralis', and the eye sees best through this point. The result is that the letter regarded on the Snellen test card is seen best; other letters in the field of vision appear less distinct. This quality of the eye is called 'central fixation'. When the eye is normal

the part seen best is extremely small. When the eye possesses central fixation it not only possesses perfect sight, but is perfectly free from strain and can be used indefinitely without fatigue. Loss of central fixation means strain, and when it is habitual leads to all sorts of abnormal conditions and is, in fact, at the bottom of most eye troubles, functional as well as organic.

2. **SHIFTING AND SWINGING:** When the normal eye has normal sight it is always shifting from one point to another; it is never stationary. This is true of the eyes closed as well as of the eyes open. It is impossible for the eye to fix on a point longer than a fraction of a second. If it tries to do so, it begins to strain and the vision is lowered. Look at a letter for an appreciable length of time, and note that the letter begins to blur, or even disappear. This shifting of the eye keeps it free from strain.

When the eye shifts slowly or rapidly from side to side, stationary objects appear to move in the direction opposite to the movement of the head and eyes. For example, shift the sight from one side of the Snellen test card to the other, note that the test card and the lines of letters appear to move in the opposite direction. This apparent movement of the object is called swinging. A very simple example of the swing is that experienced in a moving train; the telegraph poles and other objects appear to be moving in the opposite direction.

The shifting of the normal eye is short, gentle and rapid and usually not conspicuous, but by direct examination with the ophthalmoscope it can always be

demonstrated. If the eye shifts from one side of a letter to another, the letter appears to move in a pendulum-like motion. The shiftings of an eye with imperfect sight, on the contrary, are slower and jerky and their excursions are wider. The swing of the object is retarded or lost.

Normally the eye-balls move with the movement of the head and any movement of the eye-balls consciously or unconsciously, in the opposite direction of the head causes strain.

3. IMAGINATION : What we see is the mind's interpretation of the retinal images. Take a Snellen test card and hold it at a distance from your eyes at which your sight is fairly good. Look at the white centre of the large letter 'O' and compare the whiteness of the centre of the 'O' with the whiteness of the rest of the card. You may do it readily : but if not, use a screen, that is, a card with a small hole in it. With that card, cover the black part of the letter 'O' and note the white centre of the letter which is exposed by the opening in the screen. Remove the screen and observe that the white centre appears whiter than the margin of the card when the black part of the letter is exposed. When the black part of the letter is covered with a screen the centre of the 'O' is of the same whiteness as the rest of the card. It is therefore possible to demonstrate that the white centre of the 'O' appears whiter than it actually is. That is what Dr. Bates calls imagination. When you see something that is not there, you do not really see it, you only

imagine it. The whiter you can imagine the centre of the 'O', the better becomes the vision of the letter 'O' and when the vision of the letter 'O' improves, the vision of all the letters on the test card improves.

The white centres of the letters on the Snellen test card at 15 or 20 feet are imagined by the normal eye to be whiter than the margin of the card, while the eye with imperfect sight imagines the white centres of the letters to be less white than the margin of the card, or imagines them to be of the same shade. So when the sight is imperfect, not only the eye is at fault but the imagination is also impaired.

So when the eye is free from strain, its action is effortless. It possesses central fixation. The white centre inside the letter appears whiter, and the letter appears to move in the direction contrary to the movement of the eye.

The eye under strain makes an effort to see. Its power of seeing best the letter regarded becomes defective or is lost; the white centres of the letters appear less white; and the apparent movement of the letter is retarded or lost.

If somehow the defective eye can be educated to imitate consciously the qualities of the normal eye, the vision can be benefited. Dr. W. H. Bates M. D. of New York devised some simple eye exercises which readily teach the eye to adopt normal functioning. These exercises have invariably proved very efficacious in the prevention and cure of errors of refraction and in the treatment of the diseases of the inside of the

eye-ball. It does not take much time to prove their usefulness even in most of those cases in whom syphilis, rheumatism, tuberculosis or any other infection may be regarded as the cause of the disease. Prognosis of the diseases of the inside of the eye-ball is usually supposed bad because the patient is not treated simultaneously with the treatment of constitutional diseases, the patient is not given the treatment which can educate the eye to adopt normal functioning. Since eye strain will be found as a common cause in most of the cases, one who can successfully tackle the eye strain will be able to improve the eyesight considerably in most of the cases. The prognosis will be regarded then favourable.

Keeping the fundamentals of the normal eye in view I outlined the treatment for the patient. As the expression of the left eye was that of staring, I asked him to close the eyes and cover them with the palms of his hands avoiding any pressure on the eye-balls, in such a way that no light enters the eyes. This practice is called PALMING. While palming he recalled the images of some black objects as a black shoe, paint, crow, coat, curtain, cap etc. He was able to note that it was all dark before his eyes when they were closed and covered. On the first day he did palming for about 15 minutes and felt as if the heaviness and discomfort were relieved, the eyes were light. After palming for 15 minutes he removed his hands and opened his eyes gently and I taught him how the normal eye blinks. He readily adopted the right

blinking. He could easily move his upper eyelids a little to cover the pupil; at times he blinked in a wrong way, that is, he lowered the upper lids so as to touch the lower ones with a jerk. I told him that the habit of blinking was the normal habit and that it was present even in animals and tiny babies, and that blinking was a quick method of resting the eyes. It was a surprise to him to learn that blinking was imperfect, irregular or absent in diseased eyes. It did not take much time to educate him to blink gently and frequently, and in such a way that it does not become conspicuous and that it does not turn into winking.

The next process was to improve the movements or the shifting of the eye. I placed him before a swing stand which is like a window having vertical bars in it. He moved his body and head gently from side to side, moving the sight on the background without making any effort to see things. When he moved to the right, the bars of the swing stand appeared to move in the direction contrary to the movement of his eyes, head and body. The right eye was then covered with an eye shield and the left eye was educated to shift and swing before the swing stand. Unconsciously the eye stared and could not note the swing of the bars. I reminded him frequently not to look at the bars but to move the sight on the background. With the help of frequent palming the eye was tamed to shift without strain.

Then I gave him the Snellen test card and directed him to shift his sight from side to side or up and down

of the letters. He could realise the swing in the letters and was able to note that the letter regarded appeared darker than the rest. On the first day he could do central fixation only on two upper lines of the chart, but gradually he could do on all the lines. Whenever he felt any sign of tiredness, he closed the eyes.

From time to time some modifications in the exercises were made, and the right eye was kept covered during the time of practice. He was advised to go for driving with the good eye covered and note that the side objects were moving in the opposite direction. From the very first day of the treatment the vision in the left eye began to improve steadily, and in two months' time he became able to read and write. His vision without glasses improved to 6/30, and 6/15 with glasses. He could read Snellen reading type No. 2 with glasses. Colour sense developed fully except for red. Field of vision became normal. Light sense improved considerably.

FACTS RECONCILED

The primary cause of optic neuritis is eye strain or mental strain. If the strain already exists syphilis or other infections may exaggerate the strain and consequently may cause more damage, but they themselves can hardly cause optic neuritis when there is proper relaxation of the mind and eyes. It is why patients suffering from syphilis or other infections may remain free from optic neuritis, and anti-syphilitic or anti-toxin treatment in positive cases may do no good.

Cases who recover themselves without any specific treatment or recover by some specific treatment indicate that somehow the strain was relieved from the eyes and mind. Treatment of strain, side by side, with other treatments of any infection will prove really beneficial ; but drastic treatment should be avoided as far as possible.

Q.— If the disease is due to strain, then why one eye may be affected and the other remain free, as in the above case ?

A.— This is because one has two separate eyes—one may function under strain and the other not.

Q.— Why all persons suffering from mental strain do not suffer from optic neuritis or other eye diseases ?

A.— If the mind is under a strain, but if the eyes do not make any effort to see, the person will remain free from all such eye troubles ; but if the mind is under a strain and the eye also stares, imperfect sight will be the result. The habitual strain may cause diseases of the eye—functional as well as organic.

Q.— Then, why does anti-syphilitic or anti-toxin treatment help considerably in certain cases, if the strain is the main cause ?

A.— Syphilis or other infection might be increasing the strain of the mind and eyes, hence anti-syphilitic or anti-toxin treatment helped such cases. Or these cases might be recovering in the natural course of relaxation and anti-treatment got the credit.

Optic Atrophy

In optic atrophy a patient usually complains of dimness in the vision and night blindness. His defective vision is not corrected by glasses and the deterioration in his sight gradually goes on increasing. If the defect is not checked, the patient becomes blind. On examination with the ophthalmoscope the optic disc is seen white or grayish. Cases of optic atrophy are commonly supposed to be due to syphilis and anti-syphilitic treatment is administered. Such treatment generally makes the condition worse. Mental and eye strain is the real cause of optic atrophy and relaxation is the right treatment.

STORIES FROM THE CLINIC

EARLY OPTIC ATROPHY. A woman aged 35 was wearing glasses for five years. She suffered from headache for about 10 years and had great trouble in reading. A doctor prescribed plus glasses which did not relieve her pain. She consulted many doctors to relieve her pain but everyone prescribed glasses and each prescription differed from the others. The vision was gradually decreasing both for distant and near work. The last doctor diagnosed early stage of optic atrophy with hypermetropia and prescribed some injections, tonics and glasses. All such treatments proved a failure even in the checking of the disease.

Three years ago the patient visited my clinic and I found that she was suffering from hypermetropia and optic atrophy. Hypermetropia is the most frequent cause of discomfort, pain or other diseases of the eye.

In her case also hypermetropia was the cause of headache and optic atrophy. The medical men were trying to neutralise the effect of hypermetropia by prescribing glasses but did not try to remove the cause of hypermetropia, that is, a strain at the near point. New methods of treatment in this view are not given any encouragement. A specialist in the old methods would stand up and say: "If I fail no one else can succeed: I know all there is to know about the eye". If one claims to give benefit to a case of optic atrophy, he is regarded as a charlatan.

Treatment of hypermetropia is the right treatment to cure optic atrophy. The cure of hypermetropia is very simple. When one practises in the right way, a cure is always brought about. It takes no more time to practise in the right way than in the wrong way. Hypermetropia is cured by rest, and cannot be benefited by an effort. Practise with fine print is one of the best methods of relieving hypermetropia. The fine print is held first at the distance from the eyes at which the patient sees best and gradually brought closer until the patient can read it at six inches from the eyes. The patient should not look directly at the letters but at the white spaces between the lines and imagine that there is a thin white line beneath each line of letters. Correct practice with fine print daily cures hypermetropia.

In the beginning of the treatment, I prescribed Resolvent 200 which was replaced by Resolvent 500 later on. She liked to take sun-treatment early in the

morning as she was afraid of her fair complexion. Palming and swinging helped her much to relieve the headache in a few days. Then I instructed her to practise on the fine print card and photo print. In about two months' time she gained normal vision both for distance and near objects. Signs of optic atrophy disappeared.

If she had any trouble in threading a needle she would hold a needle where there was a background, close her eyes for part of a minute, remembering a small letter "O" while her eyes were closed and this would help her to thread the needle without delay or trouble.

COMPLETE OPTIC ATROPHY

Nandlal of Cawnpore got injury in his upper teeth at the age of 4 while playing hockey with his brother. Soon profuse bleeding took place and it continued for 10 days. On the 11th day, the doctor gave some injections and the bleeding stopped, but the eyesight was lost. Since then he became blind. He was examined by many doctors who diagnosed optic atrophy in both eyes and treated him for years but he got no improvement in his eyesight. Finally the doctors told him definitely that he would never recover his eyesight and there was no use of spending money.

By the recommendation of one of my patients his brother brought him to my clinic for consultation. His age then was 17. He was weeping and said that

he was waiting for death to visit him as soon as possible. I consoled him first and then spent sufficient time in the examination of his eyes. The perception of light was present in the left eye but the right eye had hardly any perception of light. The optic discs in both the eyes were white. I cherished no hope of any benefit, still I wanted to experiment on this case to find out the efficacy of Dr. Bates' methods in such cases. So I told the patient and his brother that there was a little hope of improving the sight and I would like to try the case for a month at least. The patient felt some consolation and it seemed that he had a great confidence in me and had more hopes of his recovery than I had.

I prescribed Opacitox oculose and Retinox oculose to apply in the eyes just before sun treatment three times a day. At times the eyes showed little inflammation so these medicines were stopped for a few days and Resolvent 500 was tried. The rays of the sun were focused with the magnifying glass on his closed eyelids. Palming, he practised many times a day. While sitting on his bed he practised touch swing before and after sleep. In touch swing he kept the eyes closed and put the tip of the thumb on the tip of the forefinger lightly and rubbed the thumb on the finger in one quarter of an inch length. While moving the thumb lightly on the finger he felt as if the thumb was moving on the finger and the finger on the thumb.

He had instructions to keep his eyes closed and to keep himself busy in palming and swinging. In palm-

ing there was difficulty of imagining something as he had hardly any memory of the things seen in the past, but he knew music, so I asked him to imagine the rhythm of the music which he could easily do.

His health was very poor and appetite was bad. He frequently complained of heaviness in his head. To improve his general health I prescribed enemas, regulated diet, deep breathing, oil massage for the head and the whole body and Abidol capsules to improve the vitamin deficiency. Once or twice a week he was given vapor bath and nasal drops.

For 15 days I observed no change but afterwards a ray of light penetrated his eyes ; it was like a shadow which he could distinguish vaguely when somebody appeared before him. Gradually the shadow took a shape of reality until he was able to distinguish colours of objects. He began to walk without the help of an attendant. One day he was walking with some patients. A crow was sitting at some distance ; one of the patients asked Nandlal if he could see anything in his front. Nandlal said that some black thing was there. Later on he was able to distinguish some letters on the Snellen test card at six inches. The improvement was quite slow in his case but he and I were quite satisfied with it. The patient left the hospital after two month's treatment, but he is still continuing the treatment.

SHOCK AND OPTIC ATROPHY.

The following case is from Dr. Bates' clinic and the history is written by Emily C. Lierman.

On July 16, 1923, there came to our office a man suffering with blindness caused by a sudden shock. As I stood before him and asked him what his trouble was, his eyes looked up towards the ceiling and immediately I noticed that he could not see me. He had been sent to us in the hope that Dr. Bates would be able to restore his sight. Previous to his visit on that day I received a telephone message from a woman employed by the Compensation Bureau of the City of New York. She told me that he was blind and it was the opinion of eye specialists consulted that there was no hope of his sight ever being restored. Dr. Bates examined his eyes with the ophthalmoscope and found that he had atrophy of the optic nerve and that he was under a terrible tension.

With each eye separately he could see the 200 line letter of the test card at one foot temporarily. He could only do this in flashes, because he stared continuously, which blinded him. The variable swing improved his vision to 6/200 and his field was also improved by the swing. He came daily to the office for treatment, and on the 21st. of July he read 9/20 after he had palmed his eyes for a long time. Sun-gazing outdoors improved his vision also. His general depression became less and he informed me that he was feeling much better after each visit. For a long time he did not have very much to say but after he had become better acquainted with us all, he began to talk about his case. He had been working in the moving picture studios for quite a few years

and apparently he felt no discomfort in his eyes. This is the story he told me :

"I was standing on the top rung of a ladder readjusting electrical parts used in the studios for taking moving pictures. At the time there was just an ordinary light such as is used in most offices. Without my knowing it, a strong Kleig light was suddenly turned on and I received a sudden shock which caused blindness instantly. I was taken care of, as are other employees in the studio, and then was taken home. Since then I have not been able to work. It seemed as though my troubles were multiplied when my little baby boy fell sick and died. I had no money with which to bury him until my wife's parents came to our aid. Christmas came very shortly, with no hope of Christmas cheer for my other child, a little girl just three years old. We were in debt, but I had planned, when I was able to work again, to pay back the money which was used to bury my baby. My wife tried to console me and make me feel that things were not quite so bad, but I saw no hope ahead of me on account of my blindness."

We felt all the more here at the office that our patient should have all the treatment that could be given him in order to restore his sight, if possible, and we worked diligently all through the Fall and Winter with steady results.

During the month of May we had many rainy days with very little sun. This patient had demonstrated

to us that the sun is very necessary for the eyes. During all these months of almost daily treatment he had not such poor vision as he had in the last few weeks. His vision was lowered to 10/50 and he became very much discouraged. After the sun had shone for a day he came to the office feeling light-hearted and happy. He was given the sun treatment and immediately his vision improved to normal, reading 10/10 at times. The doctor questioned his ability to dodge automobiles at the crossings here in our big city. His answer was that he could get along very well on bright days when the sun was shining, but he still feared the traffic on rainy days. While this conversation was going on the patient was looking very intently at the Doctor's face as he stood about three feet away. He did not move an eyelash, but just stared all the while he talked. He had forgotten the very thing that helped him, blinking. All of a sudden he exclaimed: "Doctor, now as I look at you, you haven't any head."

"No," the doctor replied; "seems to me the other day somebody told me I did have a head. But you never can tell; some people don't always tell the truth."

Immediately the patient apologised and hastened to say: "Oh, but doctor, when I come close enough to you I can see that you have a head."

Dr. Bates has always advocated the movies. Whenever a patient stares he advises him to go to the movies. Dr. Bates enjoys them himself and goes as often as he is able to.

We owe a great deal to the moving picture artists, for a great part of their work is done under unfavourable conditions. The Kleig light, while it is powerful, is not injurious to the eyes of the actors and actresses when their eyes are properly used. Most of them work under a terrible tension, with the feeling that their eyes will be injured by the strong glare. A great many eye spacialists no doubt have treated injury to the eyes apparently caused by the Kleig light. The light would be harmless if those who work in the studios could keep their minds relaxed and if they could also understand and use our method—resting the eyes all day long.

Dr. Bates discovered many years ago the benefit of strong light on the eyes and I have seen many patients cured by the sun treatment alone. Some of these cases were seriously affected because of their inability to stand even the rays of the sun. It is curious but true that this patient has been benefited mostly by a magnifying glass which focused the light on the white part of each eye as he looked down while the upper lid was raised. In the beginning of his treatment the mere mention of light would make him frown and shrink with fear. Now he enjoys sitting in the sun all day long and realizes that it gives him the greatest benefit. He is steadily improving. While he is not entirely cured, he reads the bottom line of the test card occasionally at ten feet.

He has great hopes of being cured and is so grateful of what has been done for his eyes that he insists

upon my writing to two of our most popular actresses of the screen who are interested in his case. We are striving to cure him so that we can send a note of thanks to those who are interested in him and to try and encourage others, who might be troubled by the Kleig light, to come to us to be benefited as he was.

CHAPTER XIX

Inflammation of the Eye

INFLAMED EYE: The inflamed eye usually shows the symptoms of redness, watering, sensitiveness to light, pain, dimness in vision etc. According to the parts which are most affected, the inflammation of the eye is called by different names—**OPHTHALMIA** (general inflammation of the eye-ball), **ACUTE CONJUNCTIVITIS** (inflammation of the conjunctiva), **IRITIS** (inflammation of the iris), **KERATITIS** (inflammation of the cornea), **scleritis** (inflammation of the sclera), **cyelitis** (inflammation of the ciliary body), **INFLAMMATORY GLAUCOMA**, etc.

TENSION: The tension of the muscles and nerves of the eye is the most important factor in all the inflammatory conditions. When a person has glaucoma, eye tension can always be demonstrated, because when the eye tension is relieved and corrected, the inflammation of glaucoma subsides. Patients with ophthalmia, iritis, scleritis etc. are suffering from tension. When the tension is relieved, the eye disease disappears.

In some cases, it is more difficult to relieve the tension than in others. No matter whether it is difficult or not, there can be no cure of the eye disease unless the tension is corrected. This tension, besides affecting the eye-ball is also manifest or can be

demonstrated in any or all parts of the body. A person who has glaucoma is not only under tension of the eyes, but also under a tension or an unusual contraction of the muscles of the arm, the hand, or all the muscles.

Tension of the internal muscles is always present when a patient has a disease of the chest, and it can be demonstrated that he is also suffering from tension not only of the chest, but also of muscles and nerves in other parts of the body.

There is a tension that contracts the bronchial tubes and interferes with the proper circulation of air into the lungs and out of the lungs. People with pneumonia, tuberculosis of the lungs, or tuberculosis of any part of the body are all suffering from eye tension, and when the eye tension is relieved, the tension in other parts of the body is also relieved. It is an interesting fact that all diseases of the eyes and all diseases of the body are generally associated with eye tension.

A very remarkable case of tension was that of an opera singer who suddenly lost her ability to sing. Specialists of the throat examined her very carefully and they were unanimous in the statement that she had paralysis of the muscles on the left side of her larynx. In connection with this paralysis there was a tumour grown on the left vocal cord. Her symptoms of paralysis were caused by tension, because when the tension was relieved, the paralysis of the vocal cord

was also relieved and cured. The tumour which had grown on the left vocal cord disappeared.

There are two things about this case which can be discussed; one is that the paralysis was caused by tension and the other that the tumour of the vocal cord was also caused by tension. When we analyze her case and try to give an explanation of what the tension accomplished, we will probably say a good many things which are not so. It is exceedingly difficult to answer the question, "Why."

We may have cases of eye diseases in which it is difficult to relieve the tension in the eyes but it may be easy to relieve the tension in the muscles of the stomach or in the various groups of muscles in the arm or hand, and when such tension is relieved, then that of the eye muscles is also relieved, and in this way the disease of the eye, no matter what it may be, can always be relieved or cured. This is a very important fact, because when understood and practised, some very severe forms of diseases of the eyes can thus be cured, and in no other way so well.

The question that comes up more prominently than any other is: What can the patient do to bring about relaxation of any group of muscles? A man by the name of F. M. Alexander, of London, has accomplished a great deal in the cure of all kinds of diseases. He says that all diseases of the body are caused by tension. They all can be cured by the relaxation of the tension. He has offered many methods of bringing about relaxation in the most

interesting, although seemingly incredible way and the most successful is to bring about relaxation by making the patient say that it is desired.

For example, a patient sitting in a chair or lying down on the floor, whichever is easier, says: "I desire relaxation of the muscles of my neck, so that my head can be lifted forward and upward." This is sometimes repeated a hundred to a thousand times. Mr. Alexander has always succeeded in having the patient bring about relaxation of the muscles of the neck by this method.

Mr. Alexander goes further and brings about relaxation of the muscles of the chest, both outside and inside, by making the patient say: "I wish my shoulder to relax and to move downward and backward. I wish my chest to relax and move backward. I wish my whole body to relax and move backward. I wish my foot to move backward without effort, without strain of any muscles of the body."

It has been a great shock to many orthodox physicians to observe the cures that Alexander has made. Epilepsy, considered by the medical profession to be incurable, has been cured by relaxation, without the use of any other form of treatment. Of course, rheumatism responds perhaps more quickly to relaxation than a great many other diseases, but there are cases of so-called rheumatism affecting the shoulder in which all parts of the joint become immovable.

One patient was afflicted with Parkinson's disease; all the joints of the body became so fastened together,

so immovable, that the patient was unable to produce any voluntary movement of the hand or the arm. As time passed, the voluntary and the involuntary muscles gradually became useless from tension. Mr. Alexander had the patient relax those muscles which she could relax most readily. When this was done, the more difficult muscles became relaxed, until finally she was cured completely by the relaxation of tension. Dr. Bates mentions the following interesting case :

“ A coal heaver whose face, hands and other parts of the body were covered with black particles of coal, came to the clinic. His right eye was suffering from a hypopion ulcer of the cornea. The case interested me very much and I took him in to see the surgeon in our department, a man who believed very strongly that an abscess in any part of the body is caused by germs, and when there is a collection of pus, it is the physician's duty to drain it and get rid of it. I said to him :

“ Would you drain that pus ? ”

He answered : “ Certainly, a man would be crazy not to drain it.”

I then said : “ Doctor, do you know that some patients in this condition, who have had the pus drained have lost an eye, and oftentimes both eyes, from sympathetic ophthalmia ? ”

“ I don't care, it ought to be drained,” he said. .

“ Just watch me,” I said.

Without cleaning the patient's face or eyes, a pressure bandage was placed over his eye and tied so tightly that his face became much swollen. I told him that in two days, his eye would be cured. The surgeon said :

“Impossible.”

I said, “Take a good look at him so that you will recognise him if you ever see him again.”

At the end of two days, the man came back, very much annoyed with me. He said that the bandage nearly killed him.

“Take it off,” I said.

He took it off and the pus had disappeared. The surgeon who saw it said that I had not cured him, that the man did not have an abscess to start with, that he had a perfectly healthy eye, and that anybody who said that the eye was full of pus two days before was wrong.

Strange it may seem, the pressure bandage relieved the tension in the eye to a considerable degree, with a result that the pus in the anterior chamber (hypopion) was entirely absorbed. The eye recovered its health in forty-eight hours and the eye-ball became very soft, because the tension was relieved.

It is well to demonstrate the results produced by tension. When the letter “O”, for instance, is remembered imperfectly, the white centre becomes a shade of gray and the black part of the letter becomes

less black and often covered with a gray cloud. To remember the imperfect letter "O" requires an effort. The effort tires the eyes and mind. The memory of imperfect sight lowers the vision of other letters. When the effort becomes sufficiently great to blur the letter "O" more completely, the tension becomes increased, the eyes feel uncomfortable and may suffer a considerable pain. This pain may be felt in the head, back of the neck, in the arms and in other parts of body.

The memory of perfect sight does not produce fatigue, pain or any other form of discomfort. The memory of perfect sight can be accomplished easily. Any effort, strain or tension spoils it. When the sight is perfect, it is possible for the memory to be perfect, because we can only remember what we have seen; when the memory is perfect, the imagination is perfect, because we can only imagine what we remember. When the imagination is perfect, the sight is perfect, because we can only see perfectly what we imagine perfectly.

EFFECTIVE METHODS: Sun treatment, palming, mental pictures and swinging are very helpful methods for relieving the tension. Enema, purgatives vapour bath, nasal drops, deep breathing and massage are effective methods in the cure of all inflammatory conditions of the eye. Drugs used by mouth or injections should be such that they do not cause any harm to the system.

PAIN: Painful eyes are treated with soothing eye wash and drops. Fomentations or vapour bath

to the face and bandaging are frequently done. If there is intolerable pain, mild fomentations are done around the eye and not on the eye; bandage the eye with warm milk cream over the lids. If the pain is accompanied by much redness in the eyes, application of leeches on the temples and vapour bath may also be tried.

THICK DISCHARGE: If the inflammation is accompanied by thick yellowish white discharge (purulent discharge) bandaging is avoided. The eye is frequently washed with lemon juice diluted with water or saline lotion or any other antiseptic lotion. M B 693 or sulphonamide tablets may be given by mouth. Penicillin may be tried. Usually the discharge soon stops, but in some cases vaccine or serum injections are given.

DIET: If there is purulent discharge from the eye, milk, curd, sugar, sour things, potato and meat are contra-indicated. Green vegetables, fruits, porridge, and bread are to be given.

If the inflammation of the eye is not accompanied by purulent discharge, milk, ghee, butter, vegetables, sugar, bread, and rice are useful things; but sour things, oil, meat, brinjal and chillies are contra-indicated.

SWELLING: If there is much swelling of the eyelids and conjunctiva, the following treatment proves very efficacious :

“ Take some fine ginger powder and dust it on an eye pad. Wash the eye and ask the patient to close

the eye ; apply a little vaseline on the eyelids and then put the pad dusted with the ginger powder over the closed eyelids. Bandage the eye and let it remain on the eye for an hour at least. The patient will complain of irritation but he should be persuaded to keep it on. This process should be repeated morning and evening. The result in some cases is wonderful. The inflammation soon subsides and the discharge stops.

AFTER TREATMENT :

When the inflammation subsides the patient is instructed to continue Resolvent 200 or Resolvent 500 or Opacitox Oculose along with sun treatment. If the sight is affected, he is advised to practise central fixation exercises on the Snellen test card and to read fine print daily. He makes it a habit to blink frequently. He practises long swing and palming before and after sleep to prevent eye strain during sleep.

STORIES FROM THE CLINIC

OPHTHALMIA: About two years ago, a patient suffering from ophthalmia with redness in the eyes and wearing dark glasses came to me and narrated the following history :

“Twenty days back I got sudden attack of redness and watering in the eyes and consulted the specialist of the local hospital, who diagnosed trachoma and treated the eyes with caustics. On alternate days the doctor applied copper sulphate on the everted eyelids. Although the treatment was very irritating,

I remained under his treatment for 15 days but got no relief. I am getting attacks of headache every morning and the vision is a little hazy. I feel much glare in light and I have to keep up myself in the dark room throughout the day."

I applied Elixir Oculose in the patient's eyes and placed him on the rocking chair facing the sun. He could not bear the light so I asked him to spread the handkerchief over the face and then rock forward and backward. After five minutes he removed the handkerchief and took sun treatment with the eyes closed for 10 minutes. When he became accustomed to take sun treatment with the eyes closed, I focused the sun rays on his closed eyelids. After sun treatment he washed his eyes in a basin full of cold water by dipping the face frequently in the water.

He then palmed for ten minutes. He practised long swing before and after sleep. Along with the relaxation treatment he was given vapour bath and nasal drops.

On the first day the patient got much relief and on the second day the redness, headache and glare became much less; and in a week's time the patient became all right.

ACUTE GLAUCOMA: A woman suffering from acute glaucoma attended the clinic with her son. Her eyes were congested and she had severe pain in the eyes and violent headache. The lids were a little swollen and the pupils dilated. Her vision was affected.

The first thing we did in her case was to give her a vapour bath and put nasal drops in the nostrils. The nasal drops were very irritating to the throat and nose. The nose began to run, eyes began to water more, the throat began to cough. In half an hour about 10 ounces of discharge from the throat and nose was collected in the spittoon. After an hour's treatment she felt much relief in her pain and headache.

Locally I gave fomentation and dropped pilocarpine lotion and bandaged the eyes. The attack disappeared on the third day.

To prevent any further attack I advised her to apply Resolvent 200, take sun treatment, do palming and sew in the right way with black thread and white cloth. After two years of the treatment her son reported that she was doing all right.

3. The following case is written by Dr. Bates' Assistant.

During the hot summer days while we were still treating patients at the Harlem Hospital Clinic, a little girl named Estelle, about eight years of age, was brought in and placed in the children's ward of the hospital. She met with an accident which destroyed the sight of her left eye. Not being a Clinic case, another doctor took charge of her. One day this doctor came to our room and asked Dr. Bates when he expected to take a vacation. Dr. Bates answered: "I take a vacation every day. Why do you ask?"

The other doctor answered: "I am serious, Dr. Bates. When do you go away for a rest?"

Dr. Bates replied: "When I am treating my patients it rests me, so I don't have to go away. Is there anything I can do for you?"

"Yes," said he. "There is a little girl in the children's ward upstairs and while I am away I would like to have you take care of her case. When I return I shall remove the injured eye, for it is in a bad state and the sight is completely destroyed."

Dr. Bates agreed to take care of the little girl and asked me to help him. We called on Estelle soon after and the nurse in charge of the ward led the way to the tiny cot in a far corner of the room. Rows upon rows of cots we passed and on each lay a young child. Some of them were the dearest little pickaninnies you ever saw. A number were crying with pain, while others looked wistful as we passed them by. I could feel their loneliness, away from their mothers, and my heart ached. I glanced at the doctor's face and I could see that he, too, felt sorry for the little ones. Finally the nurse stopped beside Estelle's cot, and the poor child looked very much frightened as the doctor and I came along. We could only see part of her face as she lay there, because the whole left side was covered with a bandage. Before Dr. Bates could say a word to her she began to cry and beg the new doctor not to hurt her like the other doctor. The nurse began to remonstrate with her, but the doctor soon quieted her when he promised in his gentle way

that he would not hurt her one single bit. She stopped weeping instantly when the doctor asked her if she would like to see how really funny she looked in a mirror. Was there ever a girl or a woman who did not want to see herself in a mirror? Estelle answered, "But I haven't any mirror."

"Oh!" said the doctor, "Mrs. Lierman always carries one in her purse."

I produced it quickly, before the child lost interest. As she saw the mirror and looked at her bandaged face I noticed that the nurse was bored; all this was a waste of time. She had other duties, undoubtedly, but Dr. Bates believes in taking his time and he surely did on this occasion. The doctor very carefully directed the child to remove the adhesive plaster herself, and in this way the bandage was removed without discomfort or pain. After the doctor had examined the eye, which was almost healed, he turned to the nurse and asked: "Why on this earth is this child kept in bed?" The nurse answered: "Because of the injury to her eye."

"So I see," said the doctor, "but the rest of her body is not sick or injured. Why cannot she get up and walk around here?" The nurse replied: "But I am obeying the doctor's orders."

"All right," said Dr. Bates, "I have charge of her case now, and I think she ought to be out of bed."

Before the nurse could tell Dr. Bates that the child would have to be dressed, he put out his arms towards Estelle and her arms went out towards him

with a smile. If our reader has ever visited a patient lying in a hospital bed, why need I explain just what Estelle had on at the time? She didn't care, neither did the doctor. He lifted her gently out of bed, and as she readily gave him her hand both walked slowly down the whole length of the ward. But, coming back, she ran with him. Of course her steps were uncertain, for she had been in bed for two weeks, which made her weak, but she had full confidence in the big doctor who held her hand and who surely would take care that she did not fall. What a funny sight she was! Bare feet, a smile, and practically nothing else. The nurse looked on disdainfully, but I must confess that I giggled. The other children in the ward became interested in the game of the doctor and Estelle. There was a grand exodus of most of the children from their beds, who were anxious to join in the fun. During this time Estelle was not quiet. She was so happy that she screamed with delight, while the other children added their voices to the riot. The nurse had a lively time for fully ten minutes or longer getting things settled again.

To go back to Estelle's trouble. She told us how she had been playing on the sidewalk near her home when she slipped and fell against the kerbstone. A piece of a broken glass bottle lay in her path and it penetrated through her upper closed eyelid and cut the eye so badly that the sight was destroyed completely. Dr. Bates treated the eye later so that it did not have to be removed. Even though she could only see out

of one eye, anyone observing her could not have guessed that the sight was destroyed in the left eye.

SWELLING OF EYELIDS AND CONJUNCTIVA: A man got severe inflammation in the left eye. There was much swelling of the eyelids and conjunctiva, and the eye-ball was protruding. He could not close the eyelids. The discharge from the eye was thick and yellowish white. He was treated in the local eye hospital for about ten days but the inflammation did not subside.

The condition of the eye was pitiable. I washed the eye with warm saline and covered it with a wet pad for about 5 minutes. Then I dusted fine ginger powder on a pad and put it on the lids and bandaged the eye. I told him to open the bandage after two hours and then wash the eyes with warm water and apply boric ointment. The same process was repeated in the evening. On the next morning the condition of the eye was quite changed. It was difficult to believe that it was the same inflamed eye. The whole inflammation subsided, the discharge became much less, but the redness in the eye continued. In six days' time the eye gained its normal condition.

PANOPHTHALMITIS: A girl of twelve had acute panophthalmitis due to an injury. The whole eye was under severe inflammation and the pus had formed inside the eye-ball. Profuse thick discharge was running out of the eye. Doctors had advised her father to get her eye-ball removed, as otherwise it might affect the other eye also. Along with the eye

wash and eye drops she was given the mixture prepared from the eye discharge. There was fever on the following night, but the discharge from the eye began to decrease from the second day, and all the inflammation subsided in about 10 days' time. The eye looked all right but she could not regain her vision.

SCLERITIS: A woman had redness somewhat of copper colour in her eyes for six months. There was no swelling of the eyelids, and discharge was absent, but she had uncomfortable feeling in the eyes and glare caused inconvenience in moving about. She was given different treatments for trachoma and conjunctivitis by several doctors but the redness and other discomforts continued.

I examined her eyes and found that the sclera of both eyes inflamed. I told her husband that she was suffering from chronic scleritis and that she would be all right in about a fortnight. Every morning I applied Elixir Oculose or Resolvent 200 in her eyes just before sun treatment, and gave an eye wash. Swinging proved more helpful than palming. On alternate days vapour bath and nasal drops were given. At bed time she applied sedative antiseptic ointment to check itching and burning sensation. At times she dropped Liq. Adrenalin Chloride well diluted. The eyes were cured in about twenty days' time.

KERATITIS: Inflammation of the eye in most cases is the result of using the eyes wrongly and permitting bad habits to develop. Staring seems to be an innocent habit, but it causes a great deal of trouble

When it is stopped and the eyes are rested by palming, swinging and blinking, the inflammation subsides and sight is benefited.

The Maharajkumar of a Rajaputana State had attacks of keratitis and ulcer cornea every now and then. Each attack affected the vision and kept him in bed for about one or two months. He was a patient of many famous eye specialists of Bombay. His body was thoroughly examined to find out the cause of recurrent attacks of inflammation. His blood was examined several times to see if syphilis were the cause, but each time the result of blood examination was negative. Once he called several eye specialists at a time to examine him thoroughly but they did not give any definite hope that future attacks could be prevented.

I had gone to Ajmer to address a meeting of Princes of the Mayo College. There I gave consultation to the Maharajkumar and found that he was a hypermetropic patient and possessed many pairs of glasses of different prescriptions. The last one was of plus three with plus one cylinder. He could read No. 3 of the Fundamental card without glasses. One could see from the expression of the face that he had the staring habit. Slight redness in the eye was constantly present. He suffered much from glare and had to use dark glasses constantly. I told him that I hoped his eyes would be cured within a few days but he did not believe it.

Treatment of hypermetropia was the right treatment for him. I prescribed Resolvent 500 to be applied in the eyes just before sun treatment, and Ophthalmo to be used after sun treatment. Palming and swinging gave good rest and relaxation. Practice of looking at the white line in between the lines of print greatly helped him to improve the near vision. He learned quickly how to blink and began to do short and gentle blinking. On the very first day of treatment he felt great benefit in his eyes, and after three days' treatment he and others began to say that the improvement in his eyes was wonderful. He could easily read the finest print without the aid of glasses, and could move about freely even in the hot sun without the use of dark glasses. The sclera of the eyes became white and the expression of the face and eyes looked healthy and normal.

He questioned me why I gave preference to fine print and not to large print. I told him that it required more of an effort to see a large letter than a small one; you have to look at a large area of a large letter and usually central fixation is lost in regarding a large area. Loss of central fixation means an effort to see. Fine print is a benefit because it cannot be read while the eyes are under a strain. They have to be relaxed. As soon as you begin to read the fine print while shifting the sight on the white lines, central fixation is improved. He then asked how one could see the letters while moving the sight on the white lines. I said, "While moving the sight on the white lines, the

sight shifts to black letters also, but the shifting is so short and rapid that one does not notice it."

TRACHOMA: Trachoma also is an inflammatory disease. Granules form on the inner surface of the lids. The patient complains of glare, watering, itching and burning sensation, feeling of foreign body in the eye, pain, and defective vision.

Trachoma is supposed to be very common and the use of medicines containing silver and copper is regarded as a specific. It is rather strange that in spite of the numerous hospitals and all possible care the disease is not prevented, and many cases even in the early stage are not at all benefited. Large number of such cases, in spite of continuous treatment, become worse and suffer from other complications even in the hands of experts.

In fact trachoma is not so common as it is supposed to be. Most of the cases, called trachoma patients, suffer from eye strain and that is why they are not benefited by anti-trachoma treatment. Such cases are soon benefited by sun treatment and relaxation methods.

However, trachoma or no trachoma, most patients are remarkably benefited by the use of Elixir oculose or Resolvent or Opacitox Oculose followed by sun treatment, eye wash, palming and reading fine print. In rare cases caustics and even operations are resorted to when the granules are big.

The Commander-in-Chief of Nepal had myopia and frequently used to get redness, watering, foreign-body sensation in the eyes. Several specialists were consulted. All of them diagnosed trachoma, prescribed medicines containing silver and copper, and advised constant use of glasses. Long use of such medicines caused entropion (a condition in which the margin of the lid rolls in due to contraction), and argyrosis (discolouration of the conjunctiva by silver solutions). A Bombay doctor performed entropion operation. His discomforts did not subside and he had to continue anti-trachoma treatment till I treated him when he was fifty-four years old. I told him frankly that he was not suffering from trachoma but from eye strain, and that all anti-trachoma treatment had made his eyes worse; he was simply astonished to hear my words because big doctors treated him for trachoma. I applied Resolvent 500 which was followed by sun treatment, eye wash, palming, swinging, reading fine print and photo print. In a month's time all his complaints disappeared and the vision considerably improved.

A man had big trachoma granules which caused redness in the eyes and other disagreeable symptoms. I performed an operation to press the granules and then occasionally touched the granules with copper sulphate. After some time Opacitox Oculose was prescribed along with sun treatment. The condition of the eyes improved much within a month's time.

SUBJECTIVE CONJUNCTIVITIS: Some people often suffer from subjective conjunctivitis. By subjective conjunctivitis is meant that the conjunctiva is inflamed without the evidence of disease. Many people with subjective conjunctivitis will complain of a foreign body in the eye and yet careful search with the use of good light and a strong magnifying glass will reveal no foreign body present. Some people with the subjective conjunctivitis complain that they have granulated lids and that they suffer from time to time from the presence of little pimples on the inside of the eyelids. The pain that they suffer is out of proportion to the cause that they give to it.

Among the many symptoms of subjective conjunctivitis there may be a flow of tears from very slight irritants. However, the tear ducts, with the aid of which the tears are drained from the eye, are usually open in these cases and they are sufficiently open to receive a solution of boric acid which may be injected through the tear duct into the nose. This shows that the tear duct is open normally, and therefore can drain the tears from the eyes.

TREATMENT — The patients suffering from subjective conjunctivitis are usually treated by the application of the caustics, drops of silver nitrate, protargol and argyrol etc., and the results are disappointing in many cases; the condition becomes worse in some cases. Liquid Adrenalin is almost a specific remedy for subjective conjunctivitis. It is to be dropped in each eye three times a day. The effect

of this medicine is very great if the patient is advised to take sun treatment for a few minutes before dropping the medicine in the eyes. In some cases dry massage of the whole body is very helpful.

FOREIGN BODY IN THE EYE : A woman had pain, watering and redness in her left eye. She was treated in a charitable eye hospital for trachoma for about a fortnight but got no relief. I examined her left eye very carefully and when I turned the upper eyelid inside out, I discovered two small eyelashes growing in. This had caused all her suffering, because every time she closed her eye the end of these eyelashes rubbed the cornea of her eye. I promptly removed the two eyelashes with a pair of cilia-forceps and immediately her trouble was over.

Another patient who had pain and redness in the eye was treated medically by other doctors for syphilis. When he did not respond to the treatment the medicine was changed. Then they gave him treatment for rheumatism. The pain still continued, so he attended my clinic. I examined his eye and found a small foreign body lodged in the cornea. This was removed and, for the first time after weeks, the poor man was relieved entirely of pain. My experience in clinic work makes me believe that in some places charity patients are not always thoroughly examined.

CHAPTER XX

Prevention of Blindness

The Government of India had appointed a Committee to enquire into the question of blindness in India and the Committee published a report offering their suggestions to combat this great problem. On the basis of this report Dr. P. R. Velayudhan Pillai in charge of the Ophthalmic Hospital, Trivandrum, had in a report submitted by him brought to light the extent of the incidence of blindness in the Travancore State and suggested certain ways and means to combat the spread of this infirmity. Dr. Pillai's observations are almost on the same line as in the Government report. It was considered necessary to discuss this matter at a conference during my visit to Travancore. The State Surgeon General, Dr. Pillai Ophthalmologist, the Director of Ayurveda, the Director of Public Health, the State Secretary and myself took part in the Conference. I put forward my views regarding the problem of blindness in Travancore and India. Everyone present in the conference appreciated my suggestions and it was decided that the Government would send one or two eye specialists to Dr. Agarwal's Eye Institute, Delhi, for about three months' training.

The report on blindness in Travancore mentions various causes of blindness and suggests various measures to combat the diseases which lead to blind-

ness. It recommends education, vaccination, nutrition, medication, operation and legislation etc. As regards the suggestions to prevent blindness due to small-pox, cataract, want of maternity care, injury, quackery and keratomalacia I have nothing to add to them and I think these suggestions will be very helpful. The report adds, "it will be fair to presume that the increase of blindness during the years 1931-45 will be at least hundred per cent higher than the figures of 1931." I think before 1931 there was more illiteracy, less medical aid, less maternity care, less knowledge to prevent blindness than in the period from 1931-45. How is it then that the blindness has increased to hundred per cent during a period when there was more education and more medical aid? It indicates that there is something wrong in the system of education and in the methods of medical aid. Unless we are able to discover the mistakes and rectify them, we shall not be able to prevent blindness which is greatly increasing. Let us consider some facts without any prejudice.

Under the present system of education and the modern ways of civilization there is great strain on the minds of children, adults and old people. The eyes and mind are closely connected and when the mind is under strain the eyes also share that strain. The habit of straining for distance or for near vision leads to the loss of sight with or without errors of refraction. The doctor finds himself incapable to relieve the strain or to improve the sight if there is no error of refraction. If there is error of refraction, glasses are

easily prescribed and the patient is usually satisfied. It is after some time that the patient finds that his sight has gone worse and that he needs a change of glasses. In this way the sight goes on deteriorating, the health of the eye suffers. A large number of blind persons are of old age. Most of the patients who become blind due to glaucoma, progressive myopia, detachment of retina, retinitis, optic neuritis, optic atrophy, choroiditis, haemorrhage and cataract are over forty years of age and suffer from some form of error of refraction or mental strain in early stages. If the strain is not relieved by glasses then they suffer from some such diseases. These diseases are found usually in better classes of people who can afford for the treatment quite nicely. Many of them begin to attend the hospitals as soon as they detect the signs of strain and defective vision. In spite of the best help of the specialist and continuous visits of the patient the sight goes on deteriorating in most of the cases. The methods which are at the disposal of the doctors usually prove inefficient and in the end the patients are left to their fate.

The hospital is a sort of doctor's laboratory. If in this laboratory we are unable to prevent and cure errors of refraction and to relieve the strain and floating specks which are present in almost all cases who are losing their sight then how can we hope to prevent blindness? If we can prevent and cure errors of refraction and the habit of straining, blindness will be much reduced in a few years' time.

To prevent errors of refraction and strain on the eyes in schools the authorities suggest detailed rules as to the size of types to be used in school books, the length of the lines, the distance between them, the distance at which the book should be held, the amount and the arrangement of the light, the construction of the desks, etc. The Germans, with characteristic thoroughness, actually used all these methods. Risley has observed in his discussion of the subject in *System of Diseases of the Eye* that "the injurious results of the educational process were not notably arrested." Dr. Sidler Hugenin of Zurich expresses his opinion that "glasses and all methods now at our command are of but little avail in preventing either the progress of the errors of refraction or the development of the very serious complications with which myopia is often associated."

Venereal diseases are supposed to be the cause of retinitis, optic neuritis, optic atrophy, choroiditis etc., hence anti-syphilitic treatment or anti-toxin treatment is adopted but really speaking the results are very poor, in spite of heavy expenses incurred in the blood examination and injections. The failure lies in determining the cause of such eye diseases.

A careful study of the subject will reveal that eye strain lies at the bottom of all such eye troubles. Syphilis or some other infection may increase the intensity of the strain. If the strain is not present, syphilis or other infection cannot cause any harm to the eye. Hence relaxation treatment to relieve the strain will prove efficacious in all such diseases though

other treatments, not harmful in any way, to combat the infection may also be adopted.

STRAIN: The eye is one of the sensory organs and it functions without any effort on the part of the subject. The normal eye has the quality of seeing best the point on which it fixes itself. For example, there is a letter C on the Snellen test card. When the eye looks at the bottom part of C, the bottom appears more distinct than the top, and when the eye looks at the top, the top appears more distinct than the bottom. This quality of the eye is called central fixation, and in the normal eye it is so acute that even on a small letter it can be experienced. This is because the retina of the eye has a tiny point of maximum vision, called 'macula lutea'. When the eye makes an effort to see, the normal function is disturbed and the sensitiveness of macula lutea is suppressed, and there is a temporary loss of central fixation. When the tendency to strain becomes habitual there is a continuous loss of central fixation, and this loss of central fixation leads to all sorts of eye troubles, functional as well as organic. If somehow central fixation can be improved, vision will automatically begin to improve and this means prevention of blindness.

PREVENTION: Dr. Bates has discovered various relaxation exercises to improve central fixation, and in my experience these exercises along with sun treatment prove very efficacious. In many of the so-called incurable cases we can improve the eyesight in quite a short time. Many cases who were either on the road

towards blindness or were actually blind got considerable improvement in their eyesight in Dr. Agarwal's Eye Institute, Delhi. Patients from all parts of India attend this Institute. The system of the treatment that this Institute follows is a synthesis of Allopathy, Ayurveda, and Dr. Bates, relaxation methods which have been fully explained in my books.

I herewith give the statement of Mr. R. V. Pillai. Bar-at-Law, ex-Director of Nizam Government's Press, who was developing symptoms of strain which were leading him towards blindness.

"I have been suffering with floating specks for several years. I consulted several doctors. The first one was an I. M. S. doctor who had specialised in the diseases of the eye in England. After a careful examination he said that my case was one that could not respond to treatment. His advice was that I should not worry but avoid straining the eye as far as possible.

After two years I felt that my eyes got tired at the end of the office work, the letters became hazy, and at intervals the vision was misty. I consulted an ophthalmic surgeon of Lahore who was passing through Hyderabad. He examined my eyes and said that I was running for cataract and there was no remedy in the world that could cure or prevent the progress of cataract and that I should bide my time.

From time to time I consulted several specialists, they only prescribed glasses. The last one, an eminent

ophthalmic surgeon, told me after dark-room examination that my left eye showed signs of cataract but that it was only incipient, the saving feature being that it would take about ten years or so to ripen and I should therefore change my glasses frequently.

Gradually the trouble increased in my left eye. It used to get clouded : there were three such attacks with intervals of three months or so. On the last attack which was of over ten days' duration I was ordered to undergo treatment with Dr. Agarwal. When I came to see the doctor I had certain reactions. My case having been pronounced as almost incurable I was sceptical about Nature Cure methods.

Dr. Agarwal proceeded with his technique. He at once declared that there was nothing organically wrong with my left eye, only it showed signs of strain. The first day's treatment gave great relief, the second day the vision became clearer, the third day the vision became almost normal ! The results were amazing.

All that I can say is what wonderful possibilities exist in the system of treatment followed by Dr. Agarwal. To me, it is par excellence."

To prevent deterioration of sight of students in the schools and colleges Snellen eye chart scheme may be introduced. A Snellen eye chart may be hung on the wall of each class room and the students should read it daily from their seats silently, first with both the eyes and then with each eye separately, covering the other eye with the palm of the hand avoiding any pressure on

the eye-ball. The students may note that the letter regarded appears, more distinct. Five minutes' practice at the beginning of the school hour is quite sufficient.

Students may be educated to blink gently, the right way of reading, writing, sewing, and seeing cinema. They may be taught how to relax by palming. All this work can be done by the teacher. This scheme will considerably decrease the number of students of defective eyesight in a year's time. Those who will have good eyesight will be able to maintain it by simple exercises. They will automatically learn how to relieve the strain if it was present at any time due to any cause.

A certain amount of supervision is absolutely necessary to make the scheme a success. At least once in a year someone who understands the method should visit each class-room for the purpose of answering questions and encouraging the teachers to continue the use of the method, and making some kind of report to the proper authorities.

Students and others suffering from trachoma and conjunctivitis can be very successfully treated in the early stages by the teacher. Such patients should first wash the eyes with water and then face the sun with the eyes closed for five or ten minutes. If convenient 1% mercurio-chrome lotion or 1% menthol solution or some other medicine may be applied.

Persons who are nearing old age should be encouraged to read the fine print without effort. Reading of the fine print daily is an aid to eyesight.

PRACTICAL WORK

One or two eye specialists may be sent to Dr. Agarwal's Eye Institute, Delhi for three months' training. One of the specialists may take up the work of giving education to the students and public by means of lectures, slides, films, booklets. The other specialist may start a separate clinic attached to the central eye hospital. A sale department to sell the medicines, books and charts may be attached to the clinic if the idea is to make it self-supporting.

If the authorities have any doubts as to its utility, let the trained doctors work under my supervision and wait for convincing results in a year's time.

D-0.50

Nº 1.






D-0.75

Nº 2.






D-1.00

Nº 3.





D-2.00

Nº 4.




Reading Type.

D-600




Nº 5.





D-900

Nº 6.

Distant Type.

Test Card

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CONSULTATION FORM

Dr. AGARWAL'S EYE INSTITUTE, DELHI

No.....

Date.....

QUESTIONS FOR ANSWER

NAME

ADDRESS

OCCUPATION..... AGE

1. Are your eyes naturally weak or strong ?.....
2. Are they small, medium or large ?
3. Are they prominent, sunken or natural?.....
4. Are they red ?.....
5. Since how long your sight began to fail ?
6. How long have you worn glasses ?
7. What is the exact distance, in inches, you usually hold your book at from the eyes, when reading with glasses?.....Without glasses?.....
8. Can you read as well by artificial light as by daylight?
9. Can you see well at a distance without glasses?.....
10. What is the power of your glasses?
Right eye.....
Left eye
11. Do your eyes pain or tire quickly when reading or at close work ?.....
12. Is there strabismus (squint)?.....
13. Does either eye involuntarily wander to the right or left, up or down ?.....

14. Here state what you think ails your eyes.....

 15. Have you had medical advice about your eyes?
 if so, what?.....
 16. Have you any chronic or constitutional disease.....
 What?.....
 17. Any other complaints.....

 18. Test your vision on the Snellen's Eye Testing
 Chart for distance and on Reading Test Type
 for near at 9 inches. Fill the following table.

	Without glasses		With glasses	
	Distance	Near	Distance	Near
Both eyes				
Right eye				
Left eye				

Note — If you want to use this form cut it along
 the line, fill up the blanks and return it to
Dr. Agarwal's Eye Institute, Delhi,
 with postage stamps.

LIST OF PUBLICATIONS

By Dr. R. S. Agarwal

	Rs	a.	p.
1. Mind and Vision	6	0	0
2. Prevention and Cure of Myopia without Glasses	4	0	0
3. Eye Troubles in Old Age (Paper Cover).	5	0	0
" " " (Cardboard Cover).	6	0	0
4. Central Fixation as an aid to Eyesight .	2	0	0
5. Hypermetropia and Glaucoma	0	4	0
6. Psycho-Solar Treatment for the Eyes.	0	4	0
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9. Blindness in India.	0	4	0
10. Surya Chakshu Vyayam (Hindi)	0	4	0
11. Floating specks	0	4	0
12. Care of the Eyes (Urdu)	0	4	0
13. Nature Cure for the Eyes (Gujarati) .	0	8	0
14. Nature Cure for the Eyes (Bengali) .	0	8	0
15. Nature Cure for the Eyes (Tamil & Telegu)	0	8	0
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18. Snellen Eye Testing Chart 'E' with black background	1	8	0
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Dr. AGARWAL'S EYE INSTITUTE
15, DARYAGANJ, DELHI

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